FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Secretary's Press Conference on Stilbestrol Delayed

WASHINGTON—The Secretary of Health, Education and Welfare this week deferred a press conference which, it was said, would have taken up the problem of stilbestrol and the Delaney clause of the food additives amendment to the food and drug law. The conference now is tentatively set for Dec. 8.

No reason was given for the postponement of the conference by the secretary, Arthur S. Flemming.

Previously prominent Food and Drug Administration officials had revealed the information that Mr. Flemming planned to discuss the stilbestrol topic.

As of late this week, there was no definite confirmation that the press conference would be held on Dec. 8.

The report on plans for the conference was another in a series of recent instances in which the use of stilbestrol in feeds and as implants and the question of its effect on human health have been receiving more attention in the public press.

At the same time that plans for the press conference were reported, newspapers were carrying stories telling of Food and Drug Administration plans to take a "new look" at the use of stilbestrol and possible effects on human health.

The FDA commissioner was quoted as saying that tests have shown minute quantities of stilbestrol in the skin and liver of chickens which have been administered the estrogen but that no residue has been found in the meat from cattle receiving stilbestrol. The question of cancer also was brought out in the stories.

At the same time, the reports did quote the commissioner as saying that the FDA study was no cause for alarm.

It was indicated that FDA would

(Turn to STILBESTROL, page 101)

Europe's Interest Slows Up, But Future Uncertain

By FRED E. TUNKS
Feedstuffs Staff

Was Europe's drouth a fleeting shot in the arm of this country's feed supply export business? Or will demand from those overseas areas, recovering from a troubled crop season, for U.S. commodities linger on, continuing to prop up markets?

Speculative questions deserve speculative answers.

Feedstuffs sources of information indicate there is a significant letup in foreign requirements that loomed into prominence more than a month ago.

Prices for most ingredients, even those of high protein content which seemed to be in most demand by European buyers, have settled down. In fact, for instance, soybean oil meal prices were scaled downward this week.

From the Midwest comes the report that day-to-day news about the drouth situation in western Europe

(Turn to EXPORT, page 101)

N. Y. Senator Proposes Labeling Meat from Animals Fed Additives

By Special Correspondent

BUFFALO, N.Y.—A bill which would require all meat and poultry products sold in New York state to bear labels informing consumers of additives used in feeding the animals will be introduced into the legislature by Frank J. Glinski, state senator.

The measure is "designed to help protect consumers from possible cancer-producing food additives." Sen. Glinski said he expected to pre-file the bill in Albany for consideration when the legislature convenes in January.

The state should act immediately to establish the safeguards because the federal administration "has not seen fit to take the proper precautionary measures," Sen. Glinski declared.

Cancer research institutes have found that "a certain hormone additive used extensively in the accelerated fattening of beef cattle and poultry can induce cancer in both animals and humans," he said.

"In recent congressional hearings on this subject, much testimony and proof has been submitted that many of these additives are cancer producing mediums, and should be banned or at least controlled," he added.

The proposed legislation would require that all live cattle and poultry entering the state for consumption by residents be certified whether or not they were fed any additives claimed

(Turn to N.Y. SENATOR, page 101)

Veterinary-Nutrition Council Gets Approval

LOOKS FOR LEADERSHIP—The feed industry today is looking for leadership from veterinarians in directing the feeder who is planning to establish mass feeding operations, Maurice Johnson, executive vice president of Professional Feeds Division, Spencer Kellogg & Sons, Inc., and president of the Midwest Feed Manufacturers Assn., told delegates to the Veterinary Nutrition Conference in Kansas City this week. (See accompanying story.)

By GEORGE L. GATES
Editor of Feedstuffs

KANSAS CITY—The Midwest Veterinary-Nutrition Council will be established shortly as a new permanent organization pledged to develop closer cooperation between the feed industry and the veterinary medical profession so that both may better serve the interests of livestock producers.

Approval of plans for the council was voted by delegates to the second annual Midwest Veterinary Nutrition Conference, sponsored by the Midwest Feed Manufacturers Assn. in cooperation with state veterinary medical associations. It was held Nov. 30-Dec. 1 at Hotel President.

The council will be made up of two representatives from each of the eight states in the Midwest's area and an equal number of feed industry representatives. The council will select its own officers and executive committee, and its activities will be built around a core of 10 objectives (see page 106) presented for approval at the conference.

Objective No. 1, calling for continuation of the Midwest conference each year, particularly earned the endorsement of participants because of the quality of the program this year, many conferees pointed out.

Much of the interest of practicing veterinarians in the conference and year-around working more closely with feed men stems from their desire to determine their most useful role in serving larger feeding operations and integrated programs.

More Important Today

Similarly, feed men active in the conference indicated interest in finding ways of "getting on the same side

(Turn to COUNCIL, page 104)

Commodity Outlook Analyzed In Light of USDA Decisions

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Details available from recent U.S. Department of Agriculture sales policy decisions for surplus agricultural commodities begin to show up an over-all pattern of what the commodity markets may anticipate in the weeks immediately ahead.

For example, this past week USDA placed a subsidy payment on oats for export, although the U.S. supply is something less than what might be called a "surplus" condition. Responsible officials told Feedstuffs this week that the imposition of a subsidy payment was designed to keep U.S. oats is line for export markets with the anticipated movement of Argentine oats, which, it was asserted, would move at prices more attractive than U.S. oats without any subsidy incentive.

At the same time, pointing up subsidy policy, one official said that in the case of corn exports, USDA was not planning to follow the markets by increasing nearby subsidy payments for corn since it did not wish to stand in the way of heavy Yugoslav exports at this time. However, they stated that somewhat of an in-

(Turn to OUTLOOK, page 8)

FEEDSTUFFS *Features This Week*

MERCHANDISING: An article on **page 18** tells how an Arkansas feed man caters to dairy farmers. Steady calls on farmers keep volume up for a Pennsylvania firm described on **page 46.**

NUTRITION: Protein and energy requirements for layers are discussed in an article starting on **page 30.**

PELLETING: An article starting on **page 38** covers both the feeding and production aspects of pelleting dairy feeds.

PRODUCTION: Operation of an Illinois custom feed plant is described in an article starting on **page 68.**

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A. D. Tillman Wins AFMA's $1,000 Research Award

CHICAGO—Dr. Allen D. Tillman, professor of animal husbandry, Oklahoma State University, has been selected by the American Society of Animal Production to receive the American Feed Manufacturers Assn. $1,000 award as the outstanding research worker in animal science for 1959.

Dr. Tillman was given the honor during the society's 51st annual meeting in Chicago Nov. 27-28. Presentation of the award was made by Dr. Ruel E. Ward, chairman of AFMA's Nutrition Council, and director of feed research, Eastern States Farmers Exchange, West Springfield, Mass.

Dr. Tillman's work was centered on many aspects of basic nutritional problems. Emphasizing the utilization of low quality roughage, and employing radioactive isotope techniques, his research led to the use of semi-purified diets for ruminant animals. He studied such problems as the influence of hormones on the absorption and utilization of calcium and phos-

(Turn to AFMA AWARD, page 101)

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The regional circulation of this issue is concentrated in the northwestern states

Top of the Hopper

WHILE THE VETERINARY NUTRITION conference is still fresh in the minds of those who attended the event and those attracted (we hope) to a news report about it on page 1, we would like to plant a suggestion for furthering better understanding between veterinarians and feed men. Conferences of the type sponsored by the Midwest Feed Manufacturers Assn. and the state veterinary medical organizations serve the important function of crystallizing thoughts on cooperation between the two groups and in providing valuable "use it now" information on topics of mutual interest. The two annual conferences also have led to formation of a permanent committee to guide cooperative efforts on a year around basis. This is a move in the right direction, and with diligent work on the part of all concerned can accomplish a great deal.

A key point in the new organization's platform is development of more "grass roots" meetings between feed men and veterinarians. It is generally agreed that unless there is good understanding and cooperation on a local level, efforts on a large organization basis will be seriously handicapped.

THIS LEADS INTO our suggestion for a "grass roots" approach that, we feel, could get right to the subsoil of better understanding. It is the sort of thing that would occur to Feedstuffs' fictional Joe Brooks—sound, fairly easy to carry off and direct in its approach. All it involves is setting up of small bull sessions (or seminars, if one wishes to be fancy), for feed men and veterinarians in individual trade areas. A group of this type could be organized with no more effort than a few phone calls, including one to the town's best restaurant to request that the proprietor save a dozen or so of his best steaks for a week from Tuesday. At the first session a schedule of monthly or every-other-month meetings could be set up.

The agenda? Shop talk. The assembled and relaxed veterinarians and feed dealers, salesmen and nutritionists could talk about such things as why certain additives are now included in a hog ration, why one veterinarian treats a particular disease one way and another uses a different approach, how Feeder Olson can be persuaded to spot disease problems before they get to the disaster stage. One topic would suggest another, and everyone would gain an understanding of how the other thinks and reacts to everyday problems.

NO SPEECHES WOULD BE necessary, but if a technician from a feed manufacturing concern or a drug supply house happened to be in the territory, he might be persuaded to share some of his knowledge. Chances are, if the bull-session is on a regular schedule, the traveling men would plan to be around fairly often. Perhaps some feeders might be asked to attend from time to time, but the group should not be allowed to get so large that free and open discussion can't take place.

Gatherings of this type, wherever someone has the gumption to get them started, could supplement the type of regional meetings held in Missouri last summer and probably assure more participation at the more formally-planned gatherings.

One midwestern feed manufacturer has agreed to try out this idea, and if results are encouraging we hope to have a report from him. Feedstuffs also would like to hear from others willing to give it a try.

Feed men, we feel, can make this "grass roots" approach germinate and spread like creeping bent to choke out any crabgrass of misunderstanding that exists between the feed industry and the veterinary medical profession.

POSSIBILITIES OF USING unextracted soybeans as a source of both protein and fat in poultry feeds has continued to attract a good deal of at-

(Turn to **TOP OF THE HOPPER**, page 101)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Improvement in formula feed business fell short of booming proportions this week—but it was enough to bring about a more optimistic tone. As has been the case for some weeks, the colder states are enjoying the greatest boosts in sales. Cattle and dairy feeds continue in the demand lead—as would be expected at this time of year. Even though hog prices have shown continuing weakness, hog feed movement is fair. There's still plenty of room for improvement in poultry feeds. An encouraging development in this regard was an increase this week in broiler prices at some points of as much as 3¢ lb. or more. A relatively inactive ingredient market probably will result in little or no feed price fluctuation. Formula feed sales could be even better if farm commodity-feed price ratios were at higher levels. The U.S. Department of Agriculture reported that prices received by farmers for meat animals Nov. 15 were down an average of 5% from a month earlier. Beef cattle were off $1.30 cwt. and more than 10% below last November. Hogs were down 40¢ cwt. to average $12.20 in mid-November. Egg prices to farmers this year were the lowest since 1942. (Ingredient prices in detail on pages 102-104. Beginning with this issue, feed ingredient quotations on those pages are wholesale prices, per ton, BULK, for prompt delivery, unless otherwise noted.)

Northwest

Just as most formula feed manufacturers in this region had expected, demand burst forth this week and mixers were enjoying business volume not seen for quite some time. And the pace is likely to keep right on this way for who knows how long.

Though demand seems to be heaviest in dairy and cattle feeds, all feeds are moving well. "We expected this," said one representative. "It had to come sooner or later." The volume increase came more later than sooner in the Northwest because the heavy feeding season got off to a slow start.

Further indication that the industry was prepared for the boom is the fact the manufacturers are keeping up with orders.

Heavy sales promotions by manufacturers probably have had something to do with the increase in formula feed movements. But still at hand are the facts that large numbers of livestock and poultry are being fed and this is the time of year for a seasonal strengthening.

Ingredient activity this week was spotty. Millfeed and animal protein feeds moved up and down during the week.

Southwest

Formula feed business in the Southwest showed a little pickup this week, but it seemed to be more because supply channels were cleared out somewhat during the Thanksgiving week than because of any upswing in feeding by farmers in the area. Mill running time is generally five days, with an occasional mill operating four days and a few running six days. Backlogs are slim.

Cattle and dairy feeds seem to be in the best demand. This is the time of year when these rations normally move well. But the fact that feeding ratios for this type of feeding are among the best in the livestock industry also has a bearing on demand, many sales departments believe.

Hog feed movement continues to be fair. Because of the poor feeding ratios, farmers are reportedly letting hogs into corn fields and trying to utilize all their feed grains rather than incur any out-of-pocket expenses. With the large number of swine in the country, a normal amount of formula feed demand should bring much larger tonnage than is being reported.

Poultry feed volume is about unchanged. There is plenty of room for improvement.

Most feed men are not over-optimistic about the outlook for feed demand in the next few months. Ingredient prices are fairly high, but because of the good export demand, they are not expected to come down sharply. And there does not seem to be any prospect for a sharp improvement in prices for hogs, eggs or poultry.

Price lists for the week are expected to go out unchanged to down as much as $1.50 ton.

Central States

The formula feed trade appears to be getting somewhat more in step with the calendar and the week just ending was about the first one so far this winter that indicated enough change in the demand to warrant a statement that seasonal improvement has finally been noted. Practically all mixers are running on a full 40-hour-week basis, which in itself is an encouraging development in view of the at least partially reduced operating schedules more or less in effect much of the fall.

Call for cattle feed has not yet caught up with the demand of a year ago, but it has shown some further moderate improvement. As for hog feeds, the corn-hog ratio remains a very popular conversation piece. Considering the size of the current crop (better than 4.4 billion bushels), corn is undoubtedly high priced. But with the government willing to lend 6¢ bushel more to farmers this season than last, it is anyone's guess as to what may happen to corn prices this season. It is self-evident that this situation can mean much to the mixed feed trade this season—more than usual.

Poultry feeds for laying flocks are doing fairly well, everything considered, but the situation in the broiler field still leaves much to be desired.

Southeast

Feed demand in the Southeast is showing slight improvement. Running time at the mills is beginning to increase. North Georgia broiler prices advanced as much as 2¢ lb. over last week. Many sales are being made on the basis of 16¢ lb., f.o.b. the farms.

Exporters report that the European situation has been taken care of and do not look for any more demand in the near future. Many believe that there will be sizeable tonnages of export meal to come back on the market during the months of January, February and March.

Demand for cottonseed meal, both in the Southeast and Mississippi Valley is very slow, and many mills have reduced prices as much as $1@2 ton, and are finding very few buyers. Most of the major feed ingredient buyers continue to buy their major proteins on an as-needed basis.

(Turn to **MARKETS**, page 107)

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Feeding Ratios Remain Low; Dairy, Turkey Positions Best

WASHINGTON — A lower hog-corn ratio was the only important exception to generally steady farm commodity-feed price ratios between mid-October and mid-November, but farm prices in general slid downward during the month ended Nov. 15 to a 19-year low relative to prices farmers pay for goods and services.

While most price ratios were steady, the steadiness was at low levels.

With low hog and poultry product prices, most ratios were below a year ago. The exceptions were in dairy products and turkeys.

The U.S. Department of Agriculture reported that as of mid-November 100 lb. live hog was equal in value to 12.4 bu. corn. A month earlier the ratio was 12.7.

Broiler-feed and egg-feed ratios remained unchanged at low levels during the comparative period, while ratios for farm chickens, turkeys, milk and butterfat gained slightly from mid-October to mid-November.

The most significant gain was in the turkey-feed ratio. At the mid-November point a pound of live turkey was equal in value to 7.5 lb. of feed, compared with a ratio of 6.8 in mid-October.

Dairy Position Best

Comparing the latest reported commodity-feed price ratios with those of mid-November of last year shows that the dairy farmer is in the most favorable feeding position. Milk-feed and butterfat-feed ratios for mid-November are up from those of a year earlier. A gain in the turkey-feed ratio over a year's time was reported, too.

Lower ratios were reported for eggs and broilers, but the most obvious slump, comparing mid-November of this year with mid-November of last year, is in the hog-corn ratio. A year ago the ratio was 6.6 points higher than it was for last month.

This week, hog prices at Chicago equalled the lowest top since March 19, 1956.

USDA said the mid-November parity ratio—which stands for prices farmers receive up against prices they pay—was 77, off two points from a month earlier and down seven points from a year earlier.

The index of prices received by farmers slipped 2% during the month ended Nov. 15 to 230% of its 1910-14 average, while higher prices of family living items pushed the index of prices paid by farmers up one third of one per cent to 297, a new November high.

Primary cause of the drop in the prices-received index—7% below a year earlier and the lowest since March, 1957—was lower prices for meat animals. The most important increases reported by USDA were for milk, potatoes, wheat, turkeys and soybeans.

Feed Prices Up

Feeder livestock prices dropped during the month ended Nov. 15, but feed costs and prices for most other production items went higher. The mid-November production goods index held at 264, less than 1% above a year earlier, but 5% below the all-time November peak in 1951.

Producers received an average of 5% less for meat animals Nov. 15 than they did a month earlier. The livestock index, 275% of its 1910-14 average, was the lowest so far this year and 16% below November, 1958.

A continued increase in wholesale milk prices and an upturn in prices for fat in cream raised the dairy products price index to 279 in mid-November. This was about 2% above both a month and a year earlier.

Farm Commodity-Feed Price Ratios

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
November, 1959	2.9	3.3	3.7	2.9	2.3	3.4	3.5	3.0	3.3	2.5
October, 1959	2.8	3.3	3.7	3.0	2.3	3.3	3.5	3.2	3.2	2.6
November, 1958	3.6	3.3	4.3	3.9	3.5	4.0	4.1	3.7	3.9	2.9
Average (1948-57)	5.7									
Average (Nov., 1948-57)	5.4									
Broilers:										
November, 1959	3.2	3.4	4.3	3.4	3.4	3.0	2.9	3.1	3.6	3.6
October, 1959	3.2	3.4	4.3	3.5	3.3	3.1	2.9	2.9	3.6	3.4
November, 1958	3.4	3.5	4.3	3.5	3.5	3.0	3.3	3.2	4.1	3.6
TURKEY-FEED—										
November, 1959	7.5	6.7	8.1	7.6	8.7	7.2	7.5	7.5	7.3	6.5
October, 1959	6.8	6.8	8.1	7.0	7.9	6.3	6.9	6.7	6.7	6.0
November, 1958	7.0	6.9	8.5	7.4	8.2	6.6	7.6	6.7	6.7	5.6
Average (1948-57)	8.6									
Average (Nov., 1948-57)	9.0									
EGG-FEED—										
November, 1959	9.5	11.0	10.5	8.7	8.1	10.6	11.7	10.8	10.7	7.8
October, 1959	9.5	10.8	10.1	9.1	8.1	10.4	11.4	10.5	10.8	8.6
November, 1957	11.8	12.1	12.7	11.4	11.0	11.9	13.0	12.1	11.8	10.2
Average (1948-57)	11.1									
Average (Nov., 1948-57)	12.9									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
November, 1959	1.60	1.61	1.52	1.70	1.73	1.77	1.49
October, 1959	1.59	1.60	1.52	1.68	1.74	1.75	1.46
November, 1958	1.57	1.58	1.47	1.68	1.70	1.73	1.52
Average (1948-57)	1.29						
Average (Nov., 1948-57)	1.48						
BUTTERFAT-FEED—							
November, 1959	26.0	...	21.1	28.9	...	17.5	19.0
October, 1959	25.8	...	21.1	28.4	...	17.5	19.1
November, 1958	25.2	...	20.7	28.5	...	17.1	19.6
Average (1948-57)	22.0						
Average (Nov., 1948-57)	23.0						

	U.S.	North Cent.
HOG-CORN—		
November, 1959	12.4	12.6
October, 1959	12.7	12.9
November, 1958	19.0	19.7
Average (1948-57)	13.4	13.7
Average (Nov., 1948-57)	13.8	14.0

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISIONS

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

South Central: Combination of the two above.

Pacific: Washington, Oregon, California.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana.

West: Combination of the two above.

BROILER PRICES ADVANCE

FAYETTEVILLE, ARK. — Broiler prices have shown a marked increase the past week, with market reporters indicating a good demand for available supplies in many areas. The market news service here noted that broiler prices at the farm were up to around 16-17¢ lb. at midweek in at least some cases in some southern broiler areas, and Delmarva prices were as high as 18-19¢. A week earlier prices were mostly about 13½¢ lb. in Georgia and other areas.

Memphis Oilseed Meal Futures Show Decline

MEMPHIS, TENN.—Oilseed meal futures suffered a rather steep decline the past week on the Memphis Board of Trade, reflecting weakness in soybean futures and slow demand for cash meal.

Speculative liquidation developed in modest quantities in soybean oil meal.

Cottonseed oil meal backed off from the recent advances, with the trade a freer seller and reports of resistance on the part of buyers. Exporters were reportedly offering a fair amount of re-sale cottonseed oil meal in the market.

One observer was of the opinion that seasonal factors will now come into play, with the big rush of early buying over and mostly fill-ins to be booked in the future.

Memphis basis soybean oil meal Dec. 1 closed $1@2.25 ton lower than on Nov. 24, unrestricted soybean oil meal 95¢@$1.90 lower and bulk solvent cottonseed oil meal $1.50@3 lower.

Zinc Bacitracin Patent Upheld, CSC Reports

NEW YORK — The Commercial Solvents Corp. this week announced that its patent on zinc bacitracin has been upheld. The company said that its position was upheld with the settlement of its suit against Grain Processing Corp., Muscatine, Iowa, for infringement of zinc bacitracin feed supplement patent No. 2,809,892.

"In an agreement which was the basis for a consent decree entered in the U.S. District Court, Southern District of Iowa, Grain Processing admitted its infringement upon CSC's zinc bacitracin patent," CSC said. "The decree bars Grain Processing from making or selling feed supplements containing zinc bacitracin."

Commercial Solvents noted that it obtained its patent for the manufacture and sale of zinc bacitracin on Oct. 15, 1957, after three years in research and development of the product. The stabilization of bacitracin with zinc occurred in the CSC laboratories during 1954, the company said. Subsequently the firm marketed six potencies of zinc bacitracin; three of the formulations are offered in combination with penicillin.

In August, 1958, CSC brought suit against Grain Processing, charging violation of CSC's zinc bacitracin patent.

Exchange Party Set

SAN FRANCISCO — The annual Christmas party of the San Francisco Grain Exchange will be held on the exchange floor starting at 4 p.m. Dec. 18. Ed Huebner, exchange manager, is in charge of arrangements for the event.

The exchange also announces that Larry Tuma of Continental Grain Co. and Jan Van der Horst of A. H. Ascherman, Inc., have become members.

Southern States Names Marketing Director

RICHMOND, VA.—Ray E. Firestone, Troutville, Va., has been named director of hatchery and poultry marketing services for Southern States Cooperative. He will work in the community services division, J. E. Givens, director of the division, has announced. Mr. Firestone has his headquarters at Troutville.

R. E. Firestone

Mr. Firestone is one of the former owners and president of the Firestone Co. poultry processing plant at Troutville which Southern States Cooperative purchased in October, 1958. Since that time, he has been employed by the cooperative as a consultant on poultry marketing and processing. He is a specialist in poultry processing and marketing and hatchery operation.

In his new position he will have over-all responsibility for poultry processing and marketing operations of the cooperative. This will include the hatchery at Troutville, which Southern States recently acquired, and the development and operation of the new egg marketing service in the Huntington, W. Va. area. He will direct all present and future activities in this field in developing a poultry marketing program closely integrated with the cooperative's other operations, officials said.

Ralston Purina Names Four District Managers

ST. LOUIS—Four Ralston Purina Co. district salesmen assumed new responsibilities as district sales managers Dec. 1, according to a recent announcement here by H. B. Morris, feed sales vice president.

Don Rix, Lennox, S. Dak., became merchandising manager of the north central region with headquarters in Minneapolis. He is a graduate of Iowa State University and joined Ralston Purina in 1956.

Ben Gibbons, Marion, Ill., became manager of poultry feed sales of the central region with headquarters in Indianapolis. He is an Oklahoma A & M graduate and has been with the firm since 1949.

Hal Bleyhl, Santa Barbara, Cal., became poultry feed sales manager for the Pacific region with headquarters at Palo Alto, Cal. He is a graduate of the University of Nebraska and has been with the company since 1952.

W. E. Cartwright, Oneida, Tenn., became manager of poultry meat feed sales with headquarters in Atlanta. He is a University of Tennessee graduate and has been with Ralston Purina since 1949.

3 Arrested Following Grain Swindle Reports

DAVENPORT, IOWA—Three men of the Davenport area have been arrested on suspicion of attempting first degree grand larceny involving grain elevators in Iowa and Minnesota.

It was reported by authorities that the alleged swindle was worked through a system of throwing off scales during purchase of soybeans from grain elevators.

The scheme was used principally in the Mason City, Iowa, and Austin, Minn., areas. One Minnesota elevator was reported to have found it was short 1,300 bu. when it took inventory at the end of the year.

In custody are Donald J. Negus, Blue Grass, Iowa; Kenneth Suhr, Rock Island, Ill., and Curtis N. Reed, Davenport.

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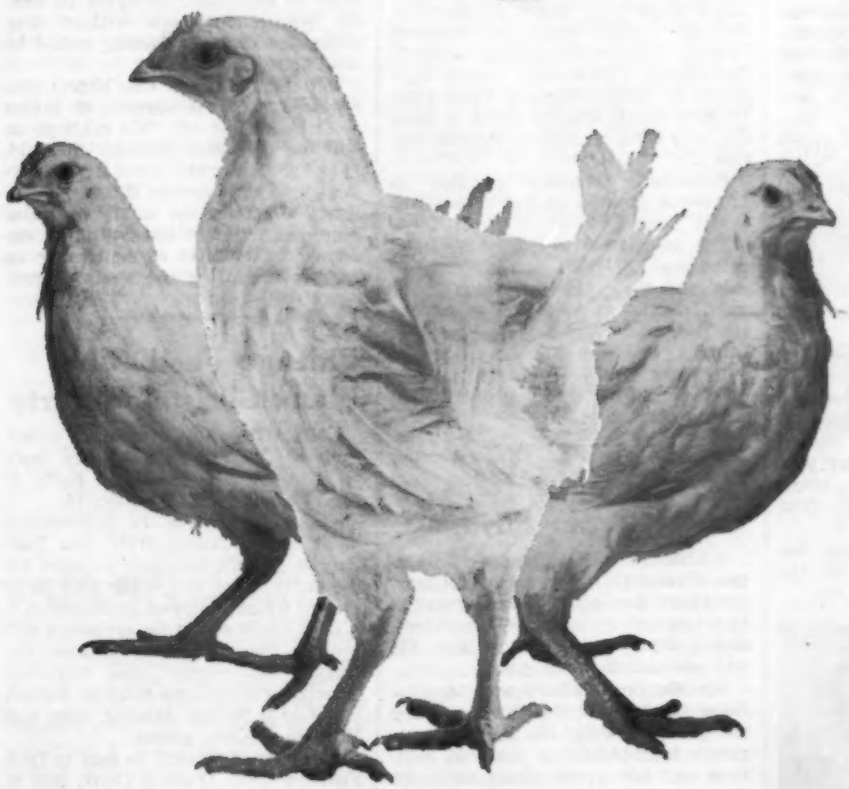

After an eight-month broiler-production test *under typical commercial conditions* – GLYCAMIDE topped leading competitive coccidiostats (including one containing an arsenical) by profitable margins. Flocks on GLYCAMIDE weighed from 3.40 to 3.97 lb., showed feed conversions of 2.75 to a low of 2.27, and point spreads ranging from 99 to a high of 136.

Further proof of how GLYCAMIDE *can pay off in increased profits* comes from the production files of one of the leading feed manufacturers in this country. These records show that 2,500,000 broilers on rations containing GLYCAMIDE weighed an average of 3.53 lb. at 9½ to 10 weeks of age, with a feed conversion of 2.34. And, within this group, 300,000 birds averaged 3.83 lb....*with a point spread of 149.*

Growers willing to work at keeping litter high and dry can take full advantage of the growth-permittant property of GLYCAMIDE...and market flocks that demonstrate these important *plus factors that mean profits!* Merck Chemical Division, Merck & Co., Inc., Rahway, New Jersey.

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Western Convention

Grain and Feed Men Expect Active Year In Washington

By FRED TUNKS
Feedstuffs Staff

DES MOINES—A prediction that 1960 could easily be the most active year in Washington for the grain trade in quite some time is indicative of how imperative to the feed and grain man are the motions and commotions the government may make in the new year.

An impression that changes in government controls and attitudes keep the industry guessing was left by Al Oliver, executive vice president, Grain & Feed Dealers National Assn., Washington, in a talk during the recent annual round-up of the Western Grain & Feed Association of Iowa here. (An earlier story covering association business activities and panel discussions of financing and grain banks heard at the Nov. 23-24 convention appeared in Feedstuffs Nov. 28.)

Mr. Oliver looked back to 1957 and 1958 to point out that at that time warehousemen responded — in some cases beyond good business judgment—to an urgent plea of the U.S. Department of Agriculture for more grain storage. At times, he said, grain men were criticized for letting farmers down by not providing sufficient storage space.

Now, it appears that the government is singing another song. USDA is concerned about the high cost of storage. Mr. Oliver said this "high cost" has been brought about by the growing amount of grain requiring storage—and is not the fault of warehousemen.

"Facts Distorted"

Mr. Oliver charged that the press has distorted the facts of the grain storage situation and erroneous publicity has been given warehousemen. "Some Congressmen are mixed up, and so are some of the people in the trade," he said. "It's amazing how little Congressmen know about your business."

Referring to the survey being conducted by the Commodity Credit Corp. and Commodity Stabilization Service of some 530 country warehouses and terminal elevators, Mr. Oliver said this survey does not consider some of the "unseen" costs such as grain shrinkage and responsibilities of warehousemen.

He noted how Food & Drug Administration regulations affect grain businesses. And he commented, "Internal Revenue is after you, too." Mr. Oliver pointed out the law which says expenses for lobbying are not tax deductible.

A bill, which Mr. Oliver said would have "almost eliminated all scrutiny of cooperatives" by the Federal Trade Commission and Department of Justice, was put up for consideration by Congress—"but it did not make it."

Mr. Oliver predicted that there would be "a real fight next year over wage-hour legislation."

Regarding farm policy, he said it looked as though there would be no legislation on corn until 1961.

"The big issue" in 1960, he said, will be grain storage. And he predicted also that "1960 probably will be the most active year in Washington in our trade in a long time."

Storage Panel

Panelists for a discussion of the grain storage situation in 1960 were Ray Pollock, director, grain branch, USDA; Joe Haspray, director, Commodity Stabilization Service office, Evanston, Ill.; Harold Brightwell, program specialist, Iowa State Agricultural Stabilization and Conservation office, Des Moines, and Bob Skinner, executive secretary, Western Grain & Feed Association of Iowa, moderator.

Ray Pollock said the government's grain storage cost survey was "getting along wonderfully well," and he congratulated warehousemen for their cooperation. He said the survey was to have been completed by about Dec. 1 and analysis of the survey would follow immediately.

"I have no idea how it will turn out, but we expect a considerable amount of variation in costs," he said. "I have no comment on any changes the government might make in the Uniform Grain Storage Agreement."

Mr. Pollock informed the Iowa group that government officials are to meet with grain trade representatives Dec. 17-18 regarding terminology of the Uniform Grain Storage Agreement. A meeting is scheduled for January to discuss rates and other UGSA terms.

Joe Haspray reviewed this year's grain storage picture because "what we do in 1960 depends a great deal on what was done in 1959."

"This has been a good year," he said. "Space has been pretty well in balance with need."

Mr. Haspray pointed out that there has been a low inventory in oats, barley and rye.

The Evanston CSS office, he said, has the largest inventory, take-over and sales of soybeans on record. "The only beans left are those in Iowa. We're down to about 9 million bushels of beans." Mr. Haspray predicted that all government beans will be bought right affer the first of the new year.

CSS expects a big corn loan because all of it is supported at the

(Turn to ACTIVE YEAR, page 101)

GRAIN BANK PANEL—The whys, whats and hows of a grain bank operated in conjunction with a feed and grain business were discussed by this panel at the 60th annual round-up of the Western Grain & Feed Association of Iowa (Nov. 22-24). Panelists (from left) are: Earl Stelpflug, manager, Farmers Supply Co., Inc., Ankeny; Ken Ludlow, assistant secretary of the Western group; Robert Zinn, district sales manager, Allied Mills, Inc., of Iowa, Mason City; I. Levin, state chemist, Des Moines, and Ray Johnson, warehouse division, State Commerce Commission, Des Moines.

Alfalfa Rail Rate Suspension Denied

KANSAS CITY — The Interstate Commerce Commission announced last week that it had concluded not to suspend new reduced rail rates on dehydrated alfalfa from Nebraska, Colorado and Kansas to southern territory.

This was pointed out in an American Dehydrators Assn. bulletin.

The reduced rates went into effect Dec. 1. Earlier Nebraska dehydrators had asked for a suspension, pending a protest hearing. They said they favored the principle of reduced rates but objected to those published on the ground that the new rates gave more favored treatment to other states. (Feedstuffs, Nov. 21.)

Similar reductions from St. Louis and other Mississippi and Ohio River crossings to the Southeast became effective Nov. 2.

Arizona Grain & Seed Association Names Officers, Directors

PHOENIX, ARIZ.—Announcement of newly-elected officers and directors of the Arizona Grain & Seed Association was made at the fifth annual association banquet here.

Elected president for the 1959-60 year was H. C. Hayden, Hayden Flour Mills, Tempe. Vice president is Glenn E. Quick, Quick Feed & Seed Co., and secretary-treasurer is Willis F. Nielson, F. P. Nielson & Sons, Mesa.

Directors include Richard P. Barnard, Southwest Flour & Feed Co.; William Corpstein, Jr., Valley Feed & Seed Co.; Chris W. Cox, Coolidge Grain & Warehouse Co.; Richard Currans, Buckeye Feed & Seed Co.; Alfred E. Evans, Northrup King & Co.; Parke Gilbert, Casa Grande Warehouse Co.; Kirk Kroloff, Advance Seed Co.; Louis A. Melczer, Arizona Flour Mills; R. Norman Pearce, Vita-Gro Feed Mills; Allen L. Rosenberg, Continental Grain Co.; Ralph M. Sloan, Western Feed, Inc.; Herbert Stein, Capital Feed & Seed Co., and John H. Zietan, Ralston Purina Co.

Reelected honorary director is Lawrence Mehren of the Valley National Bank.

The association welcomed a record attendance of more than 250 grain men and their associates at the annual banquet at the Hotel Westward Ho. Honored was outging president Louis A. Melczer, who was presented with a watch by President Hayden, in honor of his three years active duty as president.

C. L. Shippee Joins Geisel Grain Firm

KANSAS CITY—Charles L. Shippee, Kansas City feed ingredient merchandiser, has joined Geisel Grain Co. to set up and operate a feed merchandising department for the firm. He will also handle feed grains.

Mr. Shippee has been with Herring Sales Co. in feed merchandising for the past 11 years. His earlier experience includes seven years in millfeed and low grade clears sales for General Mills, Inc., in Kansas City.

The Geisel Grain Co. has its offices at 1432 Board of Trade Bldg. here. The firm has been merchandising wheat and feed grains over a wide section of the U.S. since 1917.

FEEDER PIG MARKETING

COCHRAN, ORE.—A new feeder pig marketing program is slated to start here soon to supply 400 pigs to a farm in Puerto Rico every three months. Bill Trunnell and Jerry Dykes, farmers, will be in charge of buying and shipping pigs weighing not more than 30 lb., with the price varying from $7 to $8 a head.

Elevator 'Kickbacks' On Grain for Storage Reported

DES MOINES, IOWA — Competition for government grain storage resulted in kickbacks and rebates paid to farmers by elevator operators, it was reported Dec. 2 at the congressional hearing on grain storage at the Iowa statehouse.

"We have had inquiries from some elevator operators asking if they could pay rebates for delivery of corn and our reply was that it was contrary to law," reported Waldo Wheeler, counsel for the Iowa Commerce Commission.

"We know that some elevator operators have offered as much as 6¢ bu. premium for government corn delivered to the elevator," he said.

He also testified that his department had received complaints from some elevator operators claiming they could not get enough grain to fill their elevators because other operators were paying premiums. He said some elevators will not be filled, and there is excess storage space in some areas.

Rep. Neal Smith of Iowa, one of two congressmen conducting the hearing, indicated that relief from this practice would have to come from state law, rather than from the Iowa Agricultural Stabilization and Conservation office. He indicated many commercial elevator firms have expanded their facilities the last few years in order to handle government grain and are anxious to keep their elevators filled.

The government could save $60 million on corn it will take over this year, if Commodity Credit Corp. bins were used to handle it instead of commercial elevators, Rep. Smith said. He attributed the "high cost" of corn storage in commercial elevators to the high risk taken by elevator operators in expanding facilities to handle government corn without any guarantee that the facility would be used more than a year.

Rep. Odin Langen (R., Minn.) emphasized that the surplus of grains must be leveled off. "We can't go on building unlimited storage," he said.

Joseph F. Carber, Iowa ASC chairman, said the problem should be centered on getting the supply of grains produced more in line with the demand, rather that concentrating on the storage after the grain is produced.

Chicago Feed Club Plans Christmas Party

CHICAGO—A program of entertainment and fellowship has been planned for the Christmas party of the Chicago Feed Club Dec. 14.

The Guild Hall of the Ambassador West Hotel, North State and East Goethe Streets, has been engaged for the party which will begin with cocktails at 6 p.m., followed by dinner at 7.

Dick Carlton and his orchestra will provide the music. Nip Nelson, humorist and emcee, will introduce Yonely, international musical humorist; Niki & Nelson, dancing team, and Virginia Sellers, singer.

Reservations should be sent to Dick Furman, J-M Trading Corp., 323 S. Franklin St., Chicago 6, Ill.

C. Makemson Promoted

FORT WAYNE, IND. — Carl E. Makemson has been promoted to office manager of the Central Soya Co., Inc., Chattanooga plant, according to a recent announcement.

He was transferred to his new position from Central Soya's Gibson City, Ill., plant, where he was senior bookkeeper.

Mr. Makemson is a 1950 graduate of the University of Illinois, where he received a B.S. degree in business administration.

Use of Amino Acid To Increase Steer Gains Reported

TERRE HAUTE, IND.—A new concept in ruminant feeding—shown in the use of an amino acid to increase steer and lamb gains—was reported last week by animal nutritionist Dr. William H. Hale.

The Chas. Pfizer & Co., Inc., scientist described experiments using lysine to increase the growth rate of beef steers by more than 12%, utilizing some 8% less feed per pound of gain. The report, on research conducted at the Pfizer research center at Terre Haute, was made at the annual meeting in Chicago of the American Society of Animal Production.

(Livestock nutrition papers presented at the meeting will be summarized in subsequent issues of Feedstuffs by Dr. T. W. Perry of Purdue University.)

"Although the discovery of another material that will assist our livestock producers to raise meat animals more efficiently is highly significant," Dr. Hale said, "these results are more important scientifically. They point to research paths not previously well explored with ruminants. We need to look into this area of research in greater detail if we are to continue to progress in animal as well as human nutrition."

It has been generally assumed that the ruminant could, through synthesis, supply its own amino acid needs and did not require balanced dietary sources.

According to Dr. Hale, "Our findings to date indicate that this is certainly not the case. While these experiments were conducted under specific conditions, the results do indicate that more information is needed in the areas of protein quality and amino acid supplementation of ruminant feeds."

"It is becoming apparent that the nutrition of ruminants is not nearly so simple as was formerly believed," said Dr. Hale. "It is probably the most complex of any of the domestic animals."

The good results obtained with beef steers by Dr. Hale and his Pfizer colleagues were surpassed in 68-day lamb fattening trials. A group of lambs fed a complete pelleted ration showed a rate of gain some 33% better than those lambs not fed the lysine—which was included in the test lot as L-Lysine hydrochloride at 900 grams per ton of ration.

Dr. Hale noted that lysine supplementation was applied to both high and low protein type rations, each having a high content of corn, which is exceptionally low in lysine. Two levels of lysine were used—4 grams and 10 grams per animal per day—in both low protein and high protein trials. Protein levels were 8.6 and 11.5% of the ration.

Over a full 176-day feeding period on low protein rations, daily gain of steers on the 4 gram lysine supplementation level was slightly below that of the control steers, Dr. Hale reported. There was slight improvement in feed conversion, however. The animals receiving 10 grams of lysine exhibited a 3% gain increase along with a 10% improvement in feed conversion.

With high protein rations, the lysine supplementation showed up more dramatically, especially when fed at 10 grams per head per day. These animals showed a 12.5% increase in rate of gain along with an 8.4% improved feed conversion.

DAWE'S ENTERTAINS

CHICAGO — Dawe's Laboratories, Inc., played host to American Feed Manufacturers Assn. Nutrition Council members and their wives at a cocktail party and buffet dinner the evening of Nov. 29 at the LaSalle Hotel. This reception by Dawe's is an annual event.

Worst Drouth in 54 Years Hits California

SAN FRANCISCO, CAL.—California stockmen continue to scan the skies for much needed rain clouds to bring relief from the worst drouth the state has witnessed in 54 years.

According to the U.S. Weather Bureau, the longest dry spell in California before this year occurred in 1905 when the state went without any measurable precipitation for a four-month period ending Nov. 18 of that year.

There has been no rain of any consequence in the state since the general downpour over most sections of the state on Sept. 18. Growers in many sections are feeding hay.

California hay prices last week were stronger, offerings light; some hay coming from bale storage now. Some is coming from Nevada, according to the California Crop Reporting Service.

Fresno market from Madera down through Corcoran and Tulare County was quiet with prices nominally unchanged. Trading was very light and primarily confined to immediate needs of local users. Very little hay currently is being made with stacked supplies in strong hands. Some hay is being held for sale after Jan. 1, and users are buying largely on a hand-to-mouth basis.

Arkansas Poultry Group Names Manager

LITTLE ROCK, ARK.—The Arkansas Poultry Federation recently named John M. Haid, Siloam Springs, Ark., as general manager.

Mr. Haid, 23, was graduated from the University of Arkansas in January, 1959, with a B.S. degree in general agriculture. He attended Arkansas Polytechnic College, Russellville, Ark., for the first two years of college.

Mr. Haid was named Arkansas Future Farmers of America State Star Farmer in 1954. During the summer of 1956, the FFA chose Mr. Haid as one of its four representatives to the British Isles. Mr. Haid came home in September, 1956, and after receiving the FFA's American Farmer Degree, was elected national president of the FFA.

He recently completed a tour of military duty.

General Mills Names Regional Manager

MINNEAPOLIS—H. R. Anderson, assistant to the director of sales for the feed division of General Mills, Inc., has been appointed regional sales manager for the Larrowe Region effective Dec. 1, it was announced by H. B. Herron, director of sales.

He succeeds R. A. Yort in that position. The Larrowe region covers the eastern and southeastern portions of the U.S. with headquarters in Detroit.

Mr. Anderson joined the company in 1940 and served in various capacities in connection with feed store activities. Later he became regional stores manager for the Larrowe region until transferred to Minneapolis as operations control manager for the feed division. In 1955, Mr. Anderson was named assistant to the director of sales.

To Move Hatchery

BLAIRSVILLE, GA.—Arbor Acres Farm, Inc., plans to move its hatchery facilities in Gainesville to a farm near Blairsville. The first hatch in the Blairsville facilities will take place sometime in early 1960.

Lewis Dodd, hatchery manager, said the change will enable the company to operate more efficiently by having the hatchery closer to the source of hatching eggs. The firm has been producing hatching eggs for the company's line of breeder pullets at Blairsville for the past year.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
September 26	817	346	590	571	121	598	1,125	1,827
October 3	898	372	658	494	83	506	1,097	1,797
October 10	831	514	597	566	114	564	1,022	1,880
October 17	724	445	483	524	106	574	1,189	1,833
October 24	949	493	440	633	95	511	1,428	1,765
October 31	931	452	623	579	68	539	1,563	1,869
November 7	960	309	710	617	51	500	1,484	2,069
November 14	975	435	702	628	99	557	1,506	2,092
November 21	934	462	741	583	92	629	1,664	1,838
November 28	931	426	664	524	92	648	1,790	1,908

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
September 26	739	296	2,186	272	4,462	179	2,405	1,675
October 3	832	391	2,232	270	4,383	145	2,284	1,656
October 10	831	381	2,202	283	4,510	167	2,427	1,664
October 17	658	344	1,841	295	4,500	155	2,306	1,614
October 24	443	235	2,045	293	4,802	148	2,208	1,771
October 31	641	405	2,106	302	5,080	151	2,667	1,801
November 7	860	467	2,103	300	5,051	151	2,588	1,706
November 14	840	489	2,190	344	5,054	150	2,591	1,793
November 21	1,017	402	2,284	317	5,173	148	2,674	1,791
November 28	976	414	2,173	324	5,402	120	2,587	1,903

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1959	Total 22 areas 1958
September 26	2,554	327	1,689	194	160	916	24,039	25,502
October 3	2,620	331	1,596	211	172	962	23,990	27,134
October 10	2,483	392	1,512	260	185	951	24,226	27,277
October 17	2,656	432	1,560	205	172	859	23,475	26,158
October 24	2,451	325	1,542	252	91	831	23,743	26,076
October 31	2,723	323	1,336	210	134	991	25,494	27,170
November 7	2,690	279	1,490	290	170	1,131	25,976	27,429
November 14	2,815	279	1,508	282	157	1,172	26,658	27,651
November 21	2,813	302	1,607	282	140	1,097	26,990	28,426
November 28	2,962	292	1,646	259	130	1,096	27,267	28,817

Molasses Businesses Deny FTC Charges of Antitrust Violation

WASHINGTON — Southwestern Sugar & Molasses Co., New York, several of its subsidiaries and other leading concerns in the blackstrap molasses industry have categorically denied Federal Trade Commission charges of violating the antitrust laws, FTC announced.

In addition to Southwestern, respondents answering the FTC's two complaints of last April 1 include:

Southwestern Subsidiaries:

Molasses Products, Inc., 801 Queen and Crescent Bldg., New Orleans, La.

Standard Molasses Co., Inc. (denies its principal office is at 115 Broadway, New York City, but does not give another address).

Imperial Molasses Co., Ltd., Board of Trade Bldg., Montreal, Canada.

Others:

Industrial Molasses Corp., Leonia, N.J., and Benjamin H. Ticknor II, Albert A. Teeter, Jr., and John P. Manard, president, vice president and vice president, respectively.

National Molasses Co., Oreland, Pa., and Joshua Epstein, Samuel G. Fisher, Joseph M. Rubenstone and Sidney M. Cohen, president, vice president, vice president and secretary-treasurer, respectively.

Nemtico, Inc., Albuquerque, N.M., which was cited by the FTC under its former name, New Mexico Timber Co. (Thomas Gallagher, who was charged as the concern's principal officer, says he "terminated all relationships" with it as of Feb. 28, 1959).

Czarnikow Rionda Co., 106 Wall St., New York City, and George A. Braga, Joseph B. Clifford and E. J. Kramer, president, assistant secretary and manager, molasses department, respectively.

J. H. Leftwich & Co., Inc., Alabama State Docks, Mobile, Ala., and J. H. Leftwich and Frank M. Hicks, president and vice president, respectively.

Molasses Trading Co., 503 Jones Bldg., Corpus Christi, Texas, a subsidiary of Czarnikow and Leftwich, and J. H. Leftwich, F. M. Hicks, E. J. Kramer, Harold Fink and R. L. McCauley, president, vice president, as-

(Turn to DENY CHARGES, page 101)

Cincinnati Feed Dance

CINCINNATI — The third annual dinner-dance of the Cincinnati Feed Club is scheduled for Dec. 14 in the ballroom of the Union Terminal. The Jan quartet is to furnish the music for dancing, and Santa will distribute favors to the ladies.

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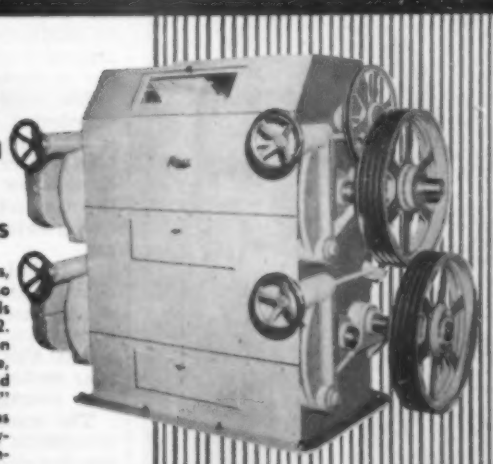

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Antibiotic Combination Overcomes Problems In Bloat Control

AMES, IOWA—By feeding combinations of antibiotics or by feeding a different antibiotic when the effectiveness of the first one began to wear off, the problem of antibiotics' loss of effectiveness after a week or 10 days in bloat control was overcome in Iowa State University studies last summer.

This was reported by R. H. Johnson last week at the meeting in Chicago of the American Society of Animal Production. Summaries of his and other Iowa reports were released by the college in Ames.

(Reviews of the various nutrition research papers presented at the society's meeting will appear in subsequent issues of Feedstuffs.)

The procedure using combinations of antibiotics for bloat control is still in the experimental stage, said Mr. Johnson, but results are encouraging. He said that although individual antibiotics, such as penicillin and erythromycin, have been used successfully for short periods in the past, they lose their effectiveness after a week or 10 days.

In one study where penicillin and erythromycin were fed together, good protection was obtained for 26 days, the researchers said. The period of effectiveness was 23 days in another trial. In both cases, considerable protection was given even after these periods, but some serious cases of bloat were beginning to appear. The incidence and severity of bloat in comparable groups of animals not receiving antibiotics were high.

Mr. Johnson said that feeding the same antibiotics one after the other extended the protection, but not for as long as feeding them together.

Among other Iowa reports on ruminant and swine studies were these:

● Calcium carbonate added to lamb rations including corn oil overcame the depressing effect of the corn oil on digestibility of other nutrients in the ration and increased the digestibility of the corn oil. It was noted that reductions in cost of fattening rations would be possible if certain low-cost, high-energy fats can be made available for ruminant nutrition.

● An enzyme mixture added to cattle rations increased gains about 9% and saved 6% on the amount of feed per unit of gain. Dr. Wise Burroughs said tests of the enzyme mixture (Agrozyme) involved 325 cattle in 43 groups in 10 experiments. The findings, it was indicated, confirm indications of benefit from the enzyme in three previously reported experiments.

● Cattle fed 600 mg. of methimazole (Tapazole) per day for feeding periods of 35 to 56 days increased feed conversion rate 15%. Daily gain also was increased an average of 15%. The effect on gains and feed conversion was the same whether the cattle were steers or heifers and whether the methimazole period was at the beginning or end of the fattening trial.

● Terephthalic acid fed to sows enables them to pass more antibiotic protection to their baby pigs in their milk. Blane Thorpe said that when terephthalic acid was fed to lactating sows in a concentration of ½% in combination with the antibiotic chlortetracycline (Aureomycin), the amount of antibiotic in the pig's blood serum was more than half again as great as when the sow received chlortetracycline alone. The acid enabled the sow to absorb more of the antibiotic.

● Copper sulphate added in amounts of 1 to 3 lb. per ton to pig growing-finishing rations increased daily gains more than 7% and slightly improved feed efficiency in four experiments. When antibiotics and copper sulphate were used together, the improvement in gains was additive. The copper sulphate evidently controls undesirable fungus growth, doing the work of anti-fungal antibiotics, said J. A. Hawbaker.

● The breeding cycles of swine are being regulated in Iowa experiments. One method is feeding of a chemical called "envoid." This suppressed activity of the pituitary gland so that the sows do not come into heat so long as they are eating the chemical. One week after the chemical is removed, all sows come into heat within a few days. Another phase of the research indicates that stilbestrol administered to the gilt before breeding increases the number of embryos which survive.

A residue isolated from bakers yeast resulted in 16% increase in weight gains for baby pigs. The yeast derivative, called "zymosam," was injected. It did not produce effects when pigs were in areas relatively disease free.

Francis L. Skinner

MILLFEED MANAGER—Francis L. Skinner has succeeded R. A. Case as southeastern area millfeed sales manager for General Mills, Inc. (Feedstuffs, Nov. 28.) Mr. Skinner has assumed merchandising of millfeed output at GMI's Hopkinsville, Ky., and Johnson City, Tenn., plants.

Dehy Disappearance Rate Gain Observed

KANSAS CITY—It was apparent in a report issued this week by the U.S. Department of Agriculture's grain office here that while dehydrators have increased their production of alfalfa meal, they have not increased stocks on hand by even half the production increase.

The report shows that stocks of dehydrated alfalfa meal on Oct. 31 of this year (463,800 tons) are 22,200 tons greater than a year earlier. Production for the 1959 season (May-October) totals 1,089,300 tons—49,000 tons greater than for last year's season.

A bulletin of the American Dehydrators Assn. said, "This does not square exactly with the indicated disappearance figure at mid-year of 662,200 tons, down 32,200 tons from a year earlier, but still above the five-year average."

The association observed that the increase in tons disappearance during the November-April half of the year is probably due to the increased amount of protective-type storage now in use. Continued export demand is another favorable factor.

Total alfalfa meal production—suncured and dehydrated together—for October of this year was 99,600 tons, down from the 113,700 tons of October, 1958. This year's total suncured and dehydrated production, May-October, was 1,166,900 tons—43,100 tons greater than for the corresponding period a year earlier.

U.S. Ingredient Market Spotty; Stronger Tone Shown in Some Items

WASHINGTON — Grain high-protein feeds, millfeeds and alfalfa meal gained price strength from Nov. 24 to Dec. 1, it was indicated by the U.S. Department of Agriculture's weekly report of average bulk ingredient prices.

Oilseed meals showed a softened tone. Animal protein feeds made a substantial dip in price during the period, then came back up a bit.

Millfeeds were in sort of a spin. USDA reported Dec. 2 that millfeed demand was excellent from all areas and there was no selling pressure in this market. Then a softening influence seemed to enter the market.

The possible resumption of the dock strike contributed to the heavy mill running time as mills attempted to complete some contracts before the deadline. This same strike talk apparently created additional millfeed demand, since resumption of the strike would shut off flour exports and millfeed supplies would be cut.

Average Bulk Prices and Index of Weighted Prices*

(Dollars per ton)

	Dec. 1, 1959	Nov. 24, 1959	Change from Previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	67.20	67.50	— .30
Cottonseed meal	67.95	67.95	...
Linseed meal	77.75	77.80	— .05
Copra cake or meal	69.75	69.75	...
Peanut meal	64.00	64.50	— .50
Index	88.8	89.1	— .3
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	70.85	72.10	—1.25
Tankage	67.35	68.60	—1.25
Fish meal	114.50	114.50	...
Index	69.6	70.5	— .9
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	46.80	46.80	...
Dist. dried grains	57.85	56.50	+1.35
Brewers dried grains	49.05	48.40	+ .65
Index	76.3	75.7	+ .6
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	41.80	41.20	+ .60
Middlings and shorts	42.95	41.60	+1.35
Index	76.5	74.8	+1.7
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	44.85	45.10	— .25
Rice bran	32.50	33.00	— .50
Index	69.0	69.5	— .5
ALFALFA MEAL			
Prices at prin. mkts.	57.20	56.50	+ .70
Index	110.1	108.8	+1.3
MOLASSES, FEEDING			
Prices at prin. mkts.	23.05	23.05	...
Index	68.6	68.6	...
ALL FEEDSTUFFS			
Index	81.9	81.7	+ .2
FEED GRAINS			
Prices at prin. mkts.:			
Corn	38.15	38.10	+ .05
Oats	48.80	48.40	+ .40
Barley	43.40	43.60	— .20
Grain sorghums	35.55	35.70	— .15
Index	63.3	63.2	+ .1

*Base period of index is 1947-49.

Source: Agricultural Marketing Service, USDA.

OUTLOOK

(Continued from page 1)

centive corn export subsidy for the April-May period could be expected which would follow the movement of the Yugoslav corn exports.

Soybeans

In connection with soybeans, these same officials now report that U.S. inventory stocks by early December had fallen to slightly more than 15 million bu. and prospects are that USDA will have exhausted such stocks by mid-January.

The soybean situation continues to produce more confusion than fact. Informed government officials maintain an earlier position that U.S. exports of beans will run substantially higher than last year. One source previously quoted in Feedstuffs still thinks his estimate of an export total is valid and supports his estimates with a reference to a big Midwestern crusher who, in mid-November, stated that bean exports would be as high as 145 million bu.

Another USDA source previously had reported to Feedstuffs that he saw a 135 million bu. bean export level. Other quarters of the administration are unwilling to accept these figures and think that the previous and lower estimate of USDA of 125 million might not be attained.

Nowhere is there any common meeting ground for these opinions, except at the recent annual outlook panel sessions on fats and oils, where government experts made the conjecture that exports would exceed the low mark of 125 million bu.

At the present time, bean exports for this crop year are running slightly ahead of a year ago, but not yet at a pace in accordance with any of the sensational export increase predictions of any of the USDA experts. However, in the export field, International Cooperation Administration has in its procurement machinery an authorization for France to buy approximately $3.8 million worth of beans in a triangular deal which sweetens the export kitty slightly.

Re-Sale Policy

One almost certainty in regard to beans concerns the new re-sale policy of USDA for its remaining surplus after Jan. 1. At the present time, USDA stocks of old crop beans have been sold first at approximately 20¢ per bushel over the new loan level of $1.85 bu., national average country price basis. However, since that announcement was first made, CSS has steadily advanced its sales price to follow a rising country market price.

Since the USDA bean stocks are nearly exhausted, it is reasonable to agree with sales officials that USDA will not announce any lower price for beans after Jan. 1. It is just not believed that USDA will dare to take any steps which would put a damper on high farm bean prices in this vulnerable political year when farm prices have been considerably lower.

In other USDA quarters, there is information that, in Minnesota and northwestern Iowa, farmers have been using the loan program for beans actively. That such a condition exists when beans are new selling well above the loan level may seem puzzling.

However, it is noted at USDA that the loan program, with its low rate of interest, is a cheaper source of money than commercial channels—heavy impoundings of beans in the loan may be a major nearby market factor, if such a condition develops.

Re-Seal Program

One market influence, which is yet to be disclosed, will be the attitude of CSS in regard to a re-seal program for beans this crop year. At present, there are more than 13 million bu. of old crop beans held in re-seal on farms. Previously, a responsible USDA official expressed doubt that a new re-seal program would be approved this year, reflecting the touch-and-go situation between supply and demand for beans this crop year.

If that decision sticks, it will mean that farm storers of old crop beans will lose any incentive to hold such beans after July 31 and will turn them over to the government, since they will no longer earn storage payments and will not be compensated for equity payments if USDA sells the beans in an open market at higher price than the loan to the farmer.

In the absence of anything other than some broad guesswork on the part of government officials and trade gossip, it still seems that the soybean farmer, through reluctance to sell beans, holds the whip hand over the bean crop price, notwithstanding the economic equation that the product of end product prices of oil and meal determines the price that the crushing industry can or will pay for this commodity.

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150 Hear Research Talks At Alabama Nutrition Meeting

By E. L. McGRAW
Alabama Polytechnic Institute

AUBURN, ALA. — Approximately 150 feed industry representatives, researchers and members of state agricultural experiment stations attended the third annual Alabama Nutrition Conference held at Auburn University Nov. 23-24.

Many results of research on nutrition were presented to the group, including:

- A report on experiments to determine methods of measuring hormone secretion to more closely identify what causes egg production.
- An immunization and control program for poultry virus diseases.
- A report on growth stimulants for beef cattle and sheep.
- An explanation of food additives, their benefits, precautions and legislation.
- New feed management of brood sows to ensure larger litters.
- A report of pros and cons of pelleting and wafering roughage for cattle.
- A grazing and feeding program for beef cattle to ensure higher profits.
- Feeding of pelleted concentrates to dairy cows.

POULTRY RESEARCH—The role of the land-grant university is still that of discovering new and useful research.

Dr. Claude Moore, poultry department head, Auburn Agricultural Experiment Station, told the group that research in poultry is no different from research in other forms of biology. "Our industry," he said, "has become one of specialists. This is true both in production and research. If research is to keep abreast with production, research aims must be continually changing by becoming less broad and more specific in nature.

"Now that the industry has grown and caught up with research, a large part of production research and application is being conducted by the industry itself," Dr. Moore noted. "This has brought about two major advancements. First, industry can do a much better job with their research tests than can experiment stations. Since genetic-environmental interaction or environmental effects are the major concerns of industry the field is the place to test results."

STUDY PROGRAM—Studying the program of the third annual Alabama Nutrition Conference at Auburn University are (left to right): W. L. Walsh, secretary-treasurer, Alabama Poultry Industry Assn., Montgomery; Dr. George Hawkins, associate dairy husbandman, Auburn; Dr. Fred Robertson, assistant director Auburn Extension Service, and Merlin Bryant, Brundidge (Ala.) Milling Co., a director of the Alabama Feed Assn. and chairman of the program committee.

ALABAMA FEED OFFICERS—Officers of the Alabama Feed Assn. attending the third annual Alabama Nutrition Conference in Auburn recently were (left to right): E. B. Medlock, Dixie Home Feeds, Albertville, vice president; John Weeks, Cosby-Hodges, Birmingham, president, and Brice R. Johnson, Ralston Purina, Birmingham, secretary-treasurer. The conference was sponsored by the Alabama Feed Assn. and the Auburn Agricultural Experiment Station and Extension Service.

The poultry husbandry department is attempting to become the poultry science department and leave the husbandry in the hands of industry, he said. "Some of the specific research undertakings at the Auburn station are (1) to describe infectious organisms by use of chemical terms, (2) to interpret virus and bacterial infections on the molecular level, (3) to show relationships between blood groups and disease and other physiological phenomena, and (4) to determine methods of measuring hormone secretion in order to more closely identify what causes egg production," Dr. Moore said.

Control Measures

CONTROL OF POULTRY DISEASES—Fundamental control measures of poultry diseases apply to all types of infectious (caused by an agent) diseases of poultry, Dr. Sam Schmittle, director, poultry research unit, University of Georgia, pointed out.

"Fortunately, we have vaccines to help control virus diseases because drugs are not effective," he said. "In practice, we may rely too heavily on the vaccines and not use the other important disease control measures which apply. Providing all of the means by which viruses travel from flock to flock can be controlled, vaccination could be eliminated."

As greater numbers of poultry are raised in an area, these means become more difficult to control, Dr. Schmittle said. Chicks placed under contract remain the responsibility of the dealer and it is necessary for his servicemen to check on these flocks. This is an ideal way for disease agents to be carried from farm to farm, he added.

Disease control measures then have to be designed to apply to all the dealer's flocks as well as the individual farm flocks, Dr. Schmittle declared. Diseases, such as Newcastle disease, can be area problems affecting many flocks in a certain county or section of the state as a result of proximity regardless of which dealer is involved, he noted. If one understands these factors of disease spread, one can take steps to control them. These control measures are essential and vaccination is a precautionary measure for added insurance, he pointed out.

GROWTH STIMULANT FOR CATTLE, SHEEP—Tests using Tran-Q, a growth stimulant, showed average results of 21 trials with cattle to be increases over lots not receiving Tran-Q, according to Dr. W. C.

ATLAS ANNOUNCES

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Finest Quality Mexican Twines	$5.90 bl.	$7.25 bl.	$6.25 bl.	New Orleans/Houston
	$6.00 bl.	$7.35 bl.	$6.35 bl.	Philadelphia/New York
ORIGINAL WINDMILL BRAND	231′-325 lb. 257′-290 lb.	500′-110 lb. 600′-100 lb.	750′-80 lb.	
Twines	$7.60 bl.	$8.80 bl. $9.80 bl.	$7.30 bl.	New Orleans/Houston Philadelphia/New York
Holland Made	$7.75 bl.	$9.00 bl. $10.00 bl.	$7.45 bl.	Chicago
HEGA BRAND "RED SIGNAL"	231′-325 lb.	600′-100 lb.		
From Western Germany	$7.60 bl.	$9.80 bl.		New Orleans/Houston Philadelphia/New York
The Twine with SOMETHING Extra	$7.75 bl.	$10.00 bl.		Chicago

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Sherman, director, nutrition research, agricultural research department, Chas. Pfizer & Co., Inc., Terre Haute, Ind. The increases were average daily gain, 8.1%; feed efficiency, 7.4%; added return per head, $4.83, and carcass grade slightly higher.

"No side effects have been observed from feeding 10-50 times recommended levels of Tran-Q to either cattle or lambs," he said. "Trials with rats, chickens, pigs, cattle, sheep, dogs and monkeys fed levels of this drug up to 100 times those recommended for growth promotion of ruminants have shown no untoward reactions," Dr. Sherman said.

FOOD ADDITIVES AMENDMENT—In explanation of a new amendment to the Federal Food, Drug and Cosmetic Act, Dr. K. B. Kerr, department of research, Dr. Salsbury's Laboratories, Charles City, Iowa, said the general purpose of the food additives amendment to the act is to provide protection of the American public which was not provided previously. "The amendment was needed and its intent should be welcomed by all," he said. "With one exception it is a carefully considered piece of legislation. I believe that it was the intent of Congress to pass legislation permitting the enforcement agency, the Food and Drug Administration, to perform its work on the basis of scientific fact and not conjecture.

"Human foods contain a number of substances which are classified as additives, because they are not normal constituents of food substances," Dr. Kerr said. "Because of our modern requirements for food distribution and the methods of marketing foods, these substances have become necessary. They improve the keeping quality, the appearance, the taste, the palatability and so on down the list. They include such substances as antioxidants, emulsifiers, stabilizers, preservatives and flavors. Prior to the passage of the food additives amendment, these substances came under the surveillance of the Food and Drug Administration only after they occurred in food and they could be eliminated only after the FDA had conducted tests which showed they were harmful. It is obvious that better control over such substances was needed."

There are about 1,000 of these substances in our foods today, Dr. Kerr stated. For many of them there is little or no scientific evidence showing whether they are harmful or harmless to man. Many of them have been used for so many years that it is possible to believe that they are harmless and can therefore be exempted from the provisions of the amendment, he said. For the remainder, it is now necessary for the manufacturer to show the results of scientific studies (toxicological studies) indicating what effects, if any, they may have on animals. From these data, interpretations can be made regarding their possible effects on man.

"Thus the burden of proof of safety of some of the old and all of the new substances has now been placed where it belongs, on the manufacturer and not on the FDA," Dr. Kerr said.

MANAGEMENT OF BROOD SOWS—In discussing feeding hogs for profit, Dr. Charles Barnhart, professor of animal husbandry, University of Kentucky, said probably less is known about the nutritional requirements of the bred sow than any other class of swine. Yet, proper feeding of the sow during gestation has as much or more influence upon litter size than any other single factor, he added. Because of their abundant supply of vitamins, minerals and protein, forages are an excellent source of these nutrients. In addition to these nutrients, it has been proven that many forages contain a reproductive factor(s) necessary for satisfactory litter size and livability of newborn pigs, he said.

"This reproductive factor(s) appears to be present in most green growing legumes and grasses," Dr. Barnhart said. "Extensive research indicates quite clearly that it is also present in alfalfa meal and that alfalfa meal must be included in drylot gestation rations at minimum levels of 15% to insure satisfactory litter size and livability."

Since sows have a reasonably large capacity for roughages, a major portion of their daily feed needs can be supplied by high quality pasture, he pointed out.

To insure maximum pasture intake, it is necessary to limit daily concentrate allowances, Dr. Barnhart said. Results of a two-year trial conducted at the Kentucky Agricultural Experiment Station, indicate that daily feed allowances for bred sows grazing good alfalfa pasture during the summer and Balbo rye pasture during winter may be reduced 50%. The extensive use of pasture for brood sows can reduce production costs considerably and is a way southern hog growers can become more competitive with the Corn Belt, he stated.

PELLETING AND WAFERING ROUGHAGE—Reporting on some of the experimental work on pelleting and wafering roughages for cattle, Dr. Richard F. Davis, head, department of animal husbandry, University of Maryland, had the following to say: "The current results of a study, partially completed at Maryland, indicate that high quality third-cutting alfalfa hay may be consumed at appreciably higher rates by growing heifers when fed in the form of pellets compared to long hay. Daily rate of gain is proportionately increased.

"Studies at Wisconsin, where wafered forages were compared to the same hay fed long, indicated no differences in intake or productivity by lactating cows. The few other observations which have come to my attention have indicated similar results. Unfortunately, there is little research information concerning the influence of wafering on the feeding value of hay.

"Our present knowledge indicates that pelleting hay increases intake by growing cattle with a concurrent increase in rate and efficiency of growth. Ground pelleted hay fed with concentrates results in an alteration of the relative concentration of volatile fatty acids in the rumen with a reduction in the percentage of fat in the milk of lactating animals. No influence on feeding value as a result of wafering roughages is indicated by our current knowledge."

Present practices in harvesting and storing forages result in rather large losses of the nutrients produced, Dr. Davis said. Physical shattering and "fermentation" losses frequently run as high as 20-30% between cutting and actual consumption. Excellent management practices can reduce this loss to 15%, or even less, he said. There is little experimental data on the losses incurred with pelleting or wafering. However, a review of the techniques as presently available re-

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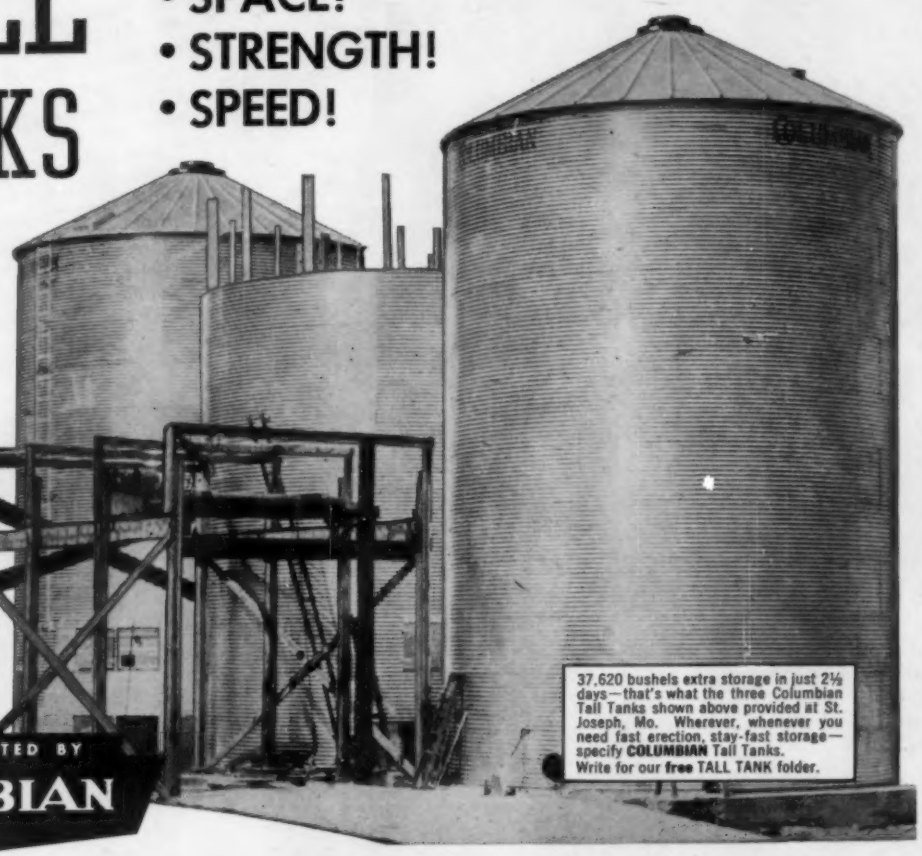

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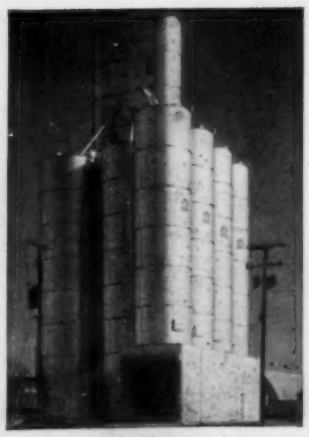

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The year 1959 has been a good year for the Peter Hand Foundation. We wish to thank our customers, new and old, for their continued confidence in our products and services. Their confidence has enabled us to again show a healthy expansion and development of our facilities. Our new plant at Dallas, Texas, has enabled us to give quicker service to the South and Southwest.

During 1959 we have expanded our sales and service forces and increased the capacity of our plant. Shortly after the new year begins, we will be able to announce the opening of our new plant for choline chloride production. This will be another step in our program to provide improved service to the feed industry.

The year 1959 has seen the Peter Hand Foundation export business expand also. The opening of the St. Lawrence Seaway has been reflected in increased Peter Hand shipments direct to Europe and other foreign ports. In 1960 we will continue to expand our foreign markets.

Peter Hand Aqua Solva for Poultry and Aqua Solva for Swine have had ready acceptance in the new 2½ lb. containers introduced this year. We will continue to explore the possibilities for improving our packaging for the convenience of our customers during 1960.

The success of our Peter Hand CF programs for sheep, beef and dairy cattle, introduced this year, continue to grow. The CF programs (formerly FW) stand for "Controlled Fermentation" and supply the "Cellulolytic Factors" to improve digestion in the rumen. Reports of excellent results from the field have prompted other feed manufacturers to try these products with similar success.

Thank you again for helping us to continue to develop in 1959. We appreciate your confidence in us and will do all we can to continue to merit it by maintaining constant improvement in the quality of our products and services.

The 1960 Peter Hand Recommended Nutrient Level Cards will soon be ready for distribution. If you would like to receive a copy, drop me a line today and I'll see to it that you receive as many as you wish, when they become available within a few weeks.

Since the next issue of this column will appear after the holidays, we at Peter Hand wish to take this opportunity to be among the first to wish you all a happy Christmas and a healthy and prosperous New Year.

J. R. LINSNER
Director of Technical Services
PETER HAND FOUNDATION

Look for "Feed for Thought" every month. This popular column appears regularly in this same place (page 14) in the first Feedstuffs issue of each month.

Peter Hand

PETER HAND FOUNDATION

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veals little possibility of any savings in this loss.

"The physical work involved in handling the large weight of forages in the harvesting process is considerable," Dr. Davis said. "The removal or handling of 1,400-1,700 lb. of water for each ton of forage cut is also a job of great magnitude. The machinery presently available for pelleting does not lend itself to routine field work. The usual baling procedure must be used and the hay transported to the pelleting machine. After pelleting, the forage occupies much less space and transportation and storage problems frequently are simplified. When high quality forages are to be shipped long distances, pelleting may be advantageous."

Cost of pelleting is an important factor in deciding on this process, Dr. Davis noted. When proper equipment is available for grinding and moving the ground hay through the pelleting machine, the job is not difficult. Much of the present equipment for conveying and storing grains is not satisfactory for handling ground hay. Live bottom bins and conveyors which can handle the very fluffy ground hay are necessary. Without this equipment attempts to pellet hay can be frustrating, he said.

Wafering machines are still in the experimental stages of development and we may see considerable improvement in the future, Dr. Davis said. At present, the machines designed for field work are quite heavy and have a high power requirement. "It is my understanding that if satisfactory wafers are to be made, the hay must be at least as dry, or even dryer, than is necessary for baling for direct storage," he said. "This does not provide much opportunity for reducing field losses during the harvesting process."

There may be considerable shattering of wafers in handling, said Dr. Davis. The reduced volume of hay after wafering may provide some advantage in transportation and storage. For efficient handling, mechanized elevating and conveying equipment is essential at the barn, he stated.

FINISHING OUT BEEF CATTLE—Discussing finishing out beef cattle, Robert Farquhar, Auburn extension beef cattle specialist, told the group that Alabama's beef cattle income can be appreciably increased in managerial fields. The carrying of beef cattle to heavier weights and upgrading these gains made on pasture with a feeding period have proven to be a profitable practice to many Alabama farmers, he noted. Experimental information clearly shows this phase of beef production can be profitably carried out from the Tennessee Valley to the Gulf Coast area. Most of the gains are realized from a cheap source of feed—grazing.

"Cattle coming off of grass do not possess sufficient finish to make desirable carcasses," said Mr. Farquhar, "but these gains made on grass can be up-graded with a relatively short feeding period in the feed lot. Such a system will allow Alabama producers to compete favorably with Corn Belt feeders, since most of their finished cattle have been in the feed lot a much longer period of time than would be necessary under Alabama conditions."

The need for more grazing and feeding of cattle is evident by recent studies that indicate a large percentage of Alabama calves go to market not possessing enough finish for desirable killing purposes, and these calves are light in weight, he said. Small feeders can continue to compete favorably with large operators since they can utilize their time more efficiently 12 months in the year by carrying out such a program. Investment for small feeders is not nearly as great, and again most of the gain put on cattle by these small feeders can be realized from grazing, whereas commercial feed lots make the largest amount of gain from more high priced feed.

PELLETED CONCENTRATES FOR DAIRY COWS—In discussing pelleting concentrates for dairy cows, Dr. George E. Hawkins, Auburn Agricultural Experiment Station, made the following report: "The percentage of dairy concentrates sold in the pelleted form is increasing rapidly. Pelleted concentrates are relatively easy to handle in bulk. Other desirable features of pelleted concentrates include (a) a minimum amount of dust created during handling and (b) adaptability to auger-gravity feeding systems employed in milking parlors.

"A rapid eating rate is desirable where high producing cows are milked and fed in a parlor. Recent research reports show that dairy cows ate pelleted concentrates faster than they ate the same feed ingredients in meal form. Some cows refused pelleted concentrates during the first three or four feedings. After a short adaptation period, however, pellets, cubes and mash were equally acceptable to all cows."

Milk production by cows fed pelleted concentrates in comparison to those fed the same mixture as meal has been inconsistent, Dr. Hawkins said. In three experiments, an increase, no change, and a decrease in 4% production were the responses associated with feeding pelleted concentrates, he noted. Several things which may be responsible for differences in response are: (a) roughage fed, (b) concentrate ingredients, (c) temperatures and pressures during pelleting and (d) breed of cows.

The effect of feeding pelleted concentrates on butterfat percentage in milk as on milk production has not been uniform, he noted. Feeding an all-pelleted ration resulted in a drop in butterfat percentage from 3-3.2% down to 2.4%. Some of the decrease in fat percentage probably was due to the grinding of the roughage, he noted. Under usual feeding and management conditions, however, the change in butterfat percentage associated with feeding pelleted concentrates has been less and ranged from a 0.2% decrease to a 0.1% increase. The average butterfat percentage in milk from cows fed meal was 4.2% as compared to 4.1% for those fed pelleted concentrates, he stated.

FEEDER PIG PRICES LOWEST SINCE 1956

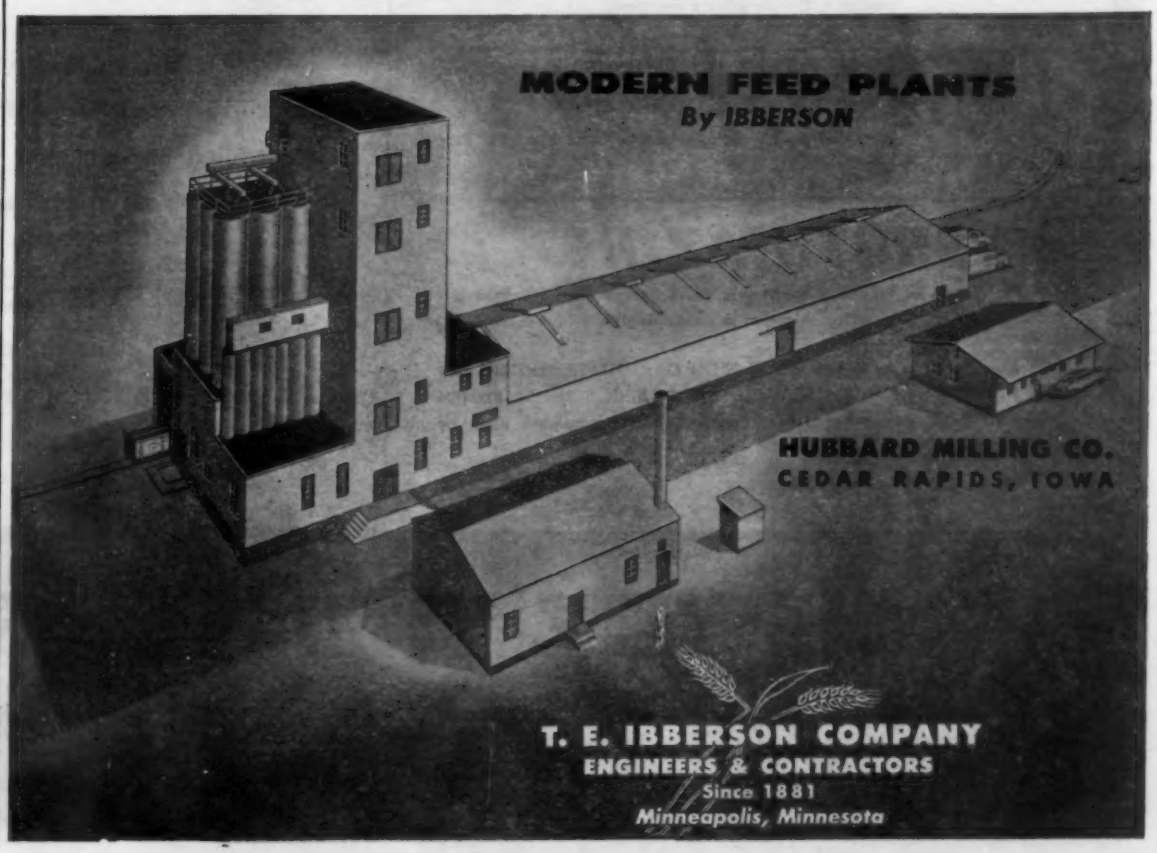
★

MADISON, WIS.—Wisconsin feeder pig prices at the beginning of November averaged the lowest for any month since April, 1956, and about half the average for November, 1958, according to the State Crop Reporting Service.

Prices at the beginning of November averaged $7.41 a head for pigs averaging eight weeks of age and 40 lb. in weight, the service said. Pigs of the same age and weight averaged $14.29 on Nov. 1 last year. The average November price was $11.41 a head.

BULK STATION

FERTILE, MINN.—Construction of a bulk feed station at Fertile (Minn.) Hatchery is nearing completion, according to Ray Christian, owner of the hatchery and a Ralston Purina Co. dealer. Capacity will be 24 tons a day, according to Mr. Christian. The station will also handle bulk concentrate.



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This wasn't enough. To make sure the new, improved "Two-Sixty-Two" would work well for you, we tried it out in many, many plants under actual operating conditions. The reports of these in-plant trials were excellent, right down the line.

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Boston Grain & Flour Exchange Sets Annual Banquet for Feb. 11

BOSTON — Plans are being made for the 1960 annual banquet of the Boston Grain & Flour Exchange. This event, known to many in the feed trade as "The Boston Tea Party," is to be held Feb. 11 at 7 p.m. in the Sheraton-Plaza Hotel here.

A social hour starting at 6 p.m. will precede the banquet, after which there will be some entertainment. The annual meeting including the election of new officers will take place Feb. 10 at 2 p.m. on the trading floor of the exchange.

Paul Sutliff, chairman of the entertainment committee, requests that all tickets be reserved through Gerard Roy, c/o Canadian Pacific Railway, 150 Causeway St., Boston. Room reservations should be made directly with the Sheraton-Plaza Hotel. Other members of the committee are R. N. MacDonald, Roland Koelsch, Frank Smith and Leigh Woehling.

Last year a large group not only from the feed trade, but also those in allied industries, attended from the Midwest, South, and Canada, as well as from the Northeast. Attendance this year is expected to reach well over 300, as the exchange is extending a special invitation to the retail feed dealers in all of the New England states to attend not only the banquet but also an open meeting to be held jointly by the Boston Grain & Flour Exchange and the New England Millers & Shippers Assn. Feb. 10 at 10:30 a.m. on the trading floor of the grain exchange at 177 Milk St.

At this meeting, William H. Day, counsel, and John E. Bressette, chairman of the traffic committee of the New England Millers & Shippers Assn., will discuss news concerning possible freight rate reductions for the Northeast.

John P. Brooks, H. K. Webster Co., president of the exchange, announces that the by-laws of the exchange recently have been amended so that retail feed dealers are now welcome to join the exchange as associate members. He also states that approximately 25 new members have joined the exchange this year and that any feed dealers, as well as members, are invited to visit the trading floor and use the library or other facilities when in Boston.

SELLIN' SAM — **By Jim Zilverberg**

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Williamson Firm Sold To New Mexico Group

WHITTIER, CAL.—John W. Williamson, chairman of the board, John W. Williamson & Sons, Inc., announces the recent sale of his company to New Mexico interests headed by Robert O. Anderson, Roswell, N.M.

R. O. Anderson

Mr. Anderson is president and principal owner of Hondo Oil & Gas Co.; he also has farming and ranching interests in New Mexico. Hondo Oil & Gas Co., former owner of Wilshire Oil Co. of California, is primarily an oil exploration and producing company with a number of other related interests.

The new owners plan to continue the present Williamson line as well as expand into a wide line of agricultural equipment. It is learned from Sherman Boss, treasurer, that the new management is developing a range of standard feed-mill units to be available from stock.

Mr. Williamson will remain as director of the company with Mr. Anderson assuming the presidency. Sales organization continues under the direction of vice president Glenn Y. Williamson.

Principal offices of the company and its manufacturing facilities will remain at Whittier. Roberts Mill Manufacturing Co., Denver, Colo., remains under the sole ownership and direction of John Williamson.

Dehydrators Add 13

KANSAS CITY, MO. — Thirteen new members have joined the American Dehydrators Assn. since the board meeting in July, according to an announcement at an executive committee meeting here recently. New members are: Calvert Milling Co., Hoytville, Ohio; Campbell & McNab, Douglas, Ont.; Fremont (Ohio) Alfalfa Mills, Inc.; Green-Life Proteins, Ltd., Branford, Ont.; Hillview Farms, Ltd., Woodstock, Ont.; Harry C. Kissinger & Son, Jackson, Wis.; Luzerna, Inc., LaPrairie, Quebec; Perrysburg (Ohio) Alfalfa Mills, Inc.; Phanenhour Alfalfa Products, Renfrew, Ont.; Weston Mills, Inc., Bowling Green, Ohio; Yarnell Bros., Deshler, Ohio; Denver (Colo.) Fire Clay Co., and Precision Bearing & Transmission Co., Omaha, Neb.

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3 NUTRITIONAL COUNCIL . . .
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4 ADVERTISING AND MERCHANDISING . . .
VIT-A-WAY provides you with a modern, up to date advertising and merchandising department to help you "create" new business with sales literature, feeding programs, advertising mats, point of sale pieces, direct mail pieces and other sales aids. It takes more than just good feed to build business . . . It requires a sound merchandising program to "step out" and outsell competition.

5 DIRECT MAIL PROGRAM . . .
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6 SALES TRAINING . . .
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7 FEEDER MEETINGS . . .
VIT-A-WAY personnel will help the feed manufacturer plan and execute group Feeder Meetings to explain and point out the value of VIT-A-WAY Fortified Feeds and Feeding programs. These meetings do a real selling job for the feed manufacturer . . . as well as perform a public service to customers and potential customers.

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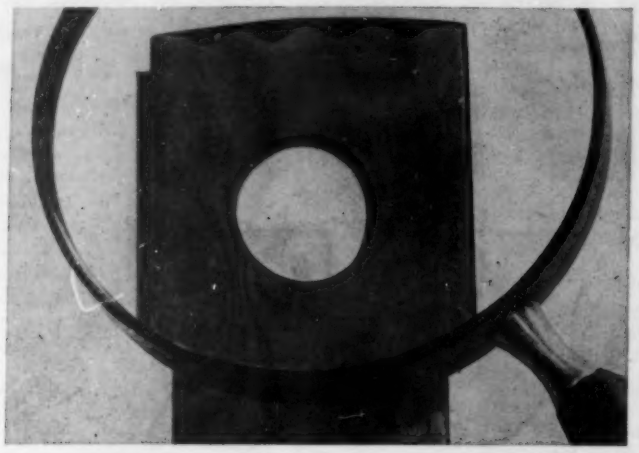

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GROWING FEED FIRM—This is the Farmers Market & Supply feed firm in Beebe, Ark. The firm has been growing, but according to plan, says W. A. Fisher, owner. Mr. Fisher plans to tear down the portion of the building on the right, extend the middle part across it and put in a modern farm and garden center.

Catering to Dairy Farmers Produces Growth for Feed Firm in Arkansas

By Jess Blair
Feedstuffs Special Writer

A few years ago W. A. (Bill) Fisher, Beebe, Ark., sat in his growing feed store, wondering in which direction to expand. Should he go in for custom grinding and mixing, promote chickens or hogs or build his business in several directions?

Finally he decided to go after the dairy business. There were 428 dairies within a 25-mile radius of Beebe, and he had practically none of them for customers. Today his Farmers Market & Supply is furnishing feed for 150 dairy owners, and a few more are added each month.

Within three years, dairy feed sales have increased from 600 sacks weekly to more than 2,200. This is just one part of the total tonnage, because he has not overlooked other types of feeding. Custom grinding and mixing is a brisk business during winter time. Making feed for hogs, beef cattle and poultry is also a part of each week's operations.

"But dairy feeds are our main line," said Mr. Fisher. "I've concentrated on them much more than other feeds, mainly because the business is already there. It doesn't take promotion and heavy capital, such as you find among broiler dealers."

At first, Mr. Fisher did a lot of studying about dairy feeds. He read all he could, made numerous visits to laboratories and corresponded with some of the leading companies of the United States. When he devised a new feed, he always had two or three companies check it.

Building Program

"In that way we began to make some progress," he said. "As business picked up, I had a building program in 1955, and, at the beginning of the next year, had a lot of new milling equipment ready to operate."

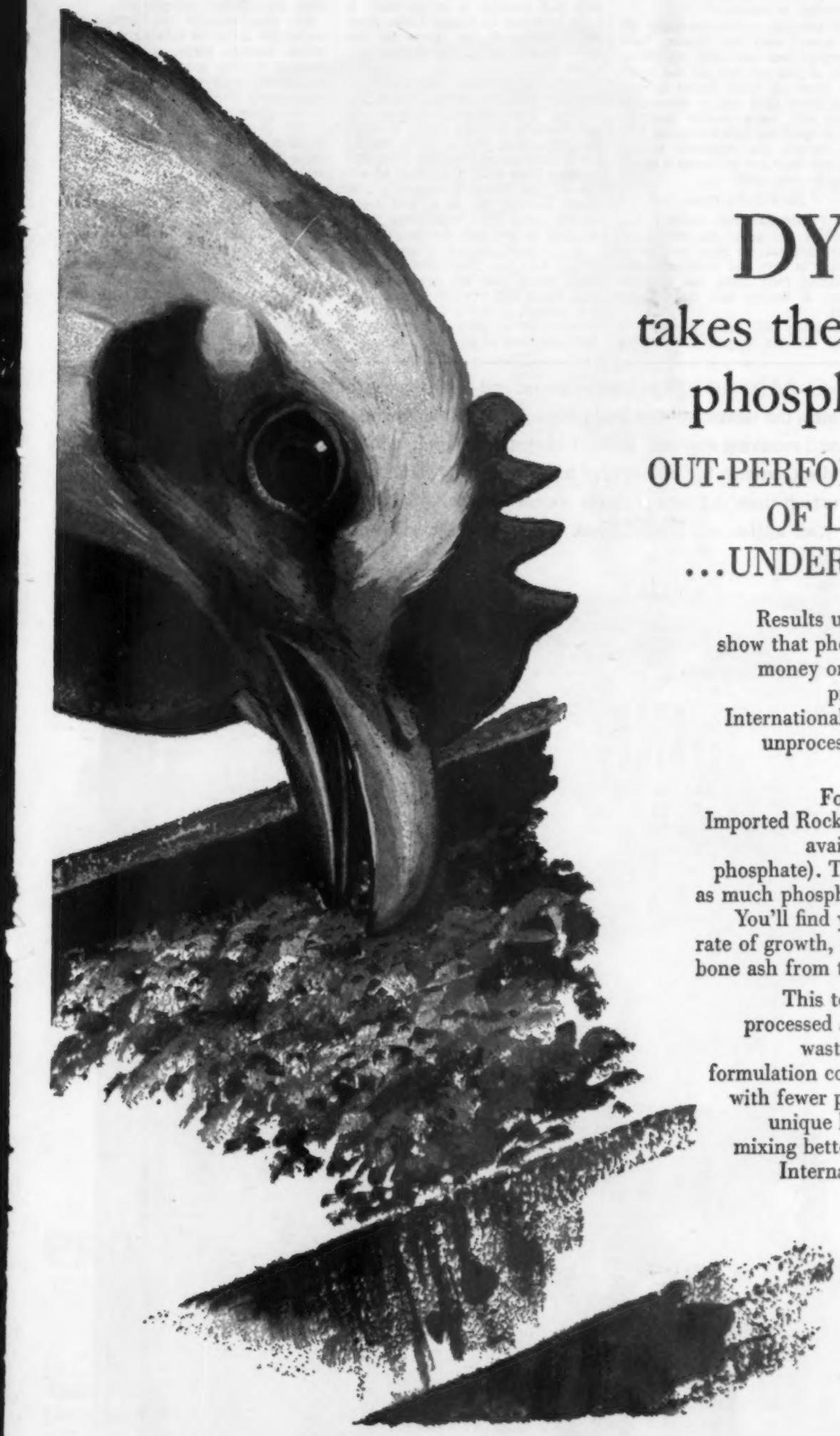
In an annex which he built onto the main building, he added such equipment as a Kelly Duplex vertical mixer, a 22-inch Kelly hammermill, a Roskamp oat crimper, Big Chief chop mill and a Kelly molasses unit. He also bought a sewing machine for the sacks and added minor equipment.

"After getting the new equipment, I put on my hat and went visiting," Mr. Fisher said. "I talked to these dairymen, told them what we had and the kinds of feed we could make. I had plenty of competition, so they came in slowly, but the number increased every month."

Two or three years ago anaplasmosis struck many of the herds. Mr. Kelly had been putting Aureomycin in some of the rations, and he said

SACKING CRIMPED OATS — A worker sacks crimped oats at Farmers Market & Supply in Beebe, Ark. In addition to regular dairy feeds, crimped oats and molasses mixtures and other feeds, the firm also does considerable business in the custom grinding and mixing of other types of feed.

STORED FEED—This is stored feed at the Farmers Market & Supply in Beebe, Ark. The picture shows a new storage room which W. A. Fisher, the owner, recently completed.



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this had received a considerable amount of criticism. However, while many dairymen suffered severe losses, none of the cattle Mr. Fisher was feeding had died. Another time the drug helped in controlling foot rot.

The Farmers Market & Supply has four basic dairy rations, with oats being the main ingredient. The first ration has 16% protein and some trace minerals. The second also has 16% protein but is more fortified with special ingredients. No. 3 is fortified, has Aureomycin added but is still 16% protein. The fourth ration has 18% protein, Aureomycin and certain other ingredients.

Some dairymen do not know which ration should be used, so Mr. Fisher and his field supervisor must do a lot of visiting and inspecting herds. They usually can help with minor ailments, but for major sicknesses a veterinarian is called.

"Our average owner has about 30 dairy cows," said Mr. Fisher, "and the largest one has over 80. These dairies, as you can see, are not nearly so large as some found around the big cities. And that is one reason we are still using sacked feed instead of handling bulk deliveries. The dairy owners are equipped to use sacks and have not indicated a desire to change over yet."

No Pelleted Feed

Mr. Fisher does not make a pelleted feed but keeps an open mind on the subject. He says that when the time is ripe and dairymen want a pelleted feed, then the Farmers Market & Supply will install such a mill.

Practically all dairy feed is delivered to the farms. Mr. Fisher helped in finding a market for the milk but handles it in no way. A large company in nearby Little Rock sends trucks to the farms for the milk, then pays the producers outright.

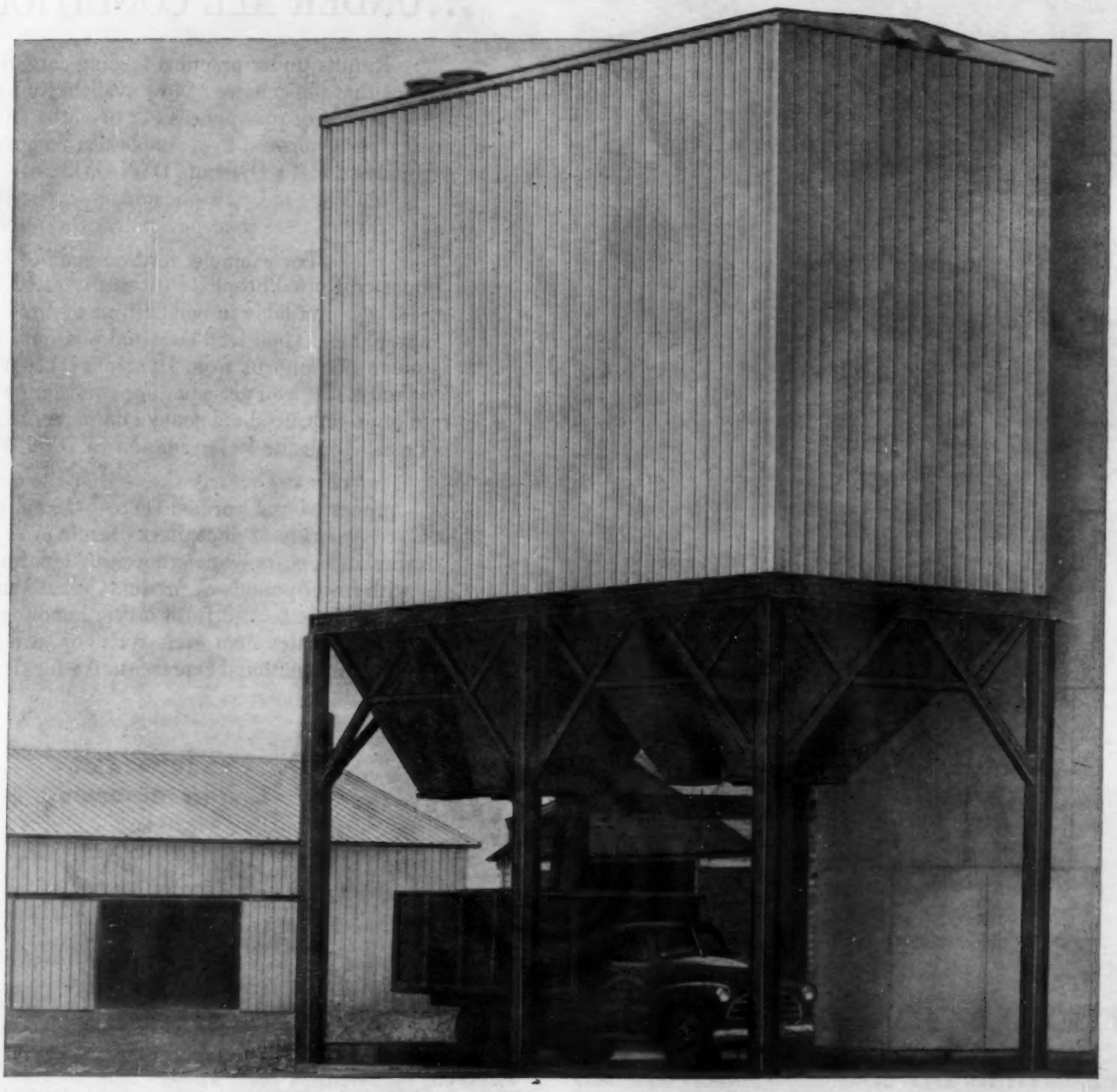
"And that system causes a problem for the feed dealer," said Mr. Fisher. "For instance, a man told me recently he was ready to start using my feed, but he wants to pay for it from his milk check. Feed that he uses from Nov. 1 to Nov. 15 will not be paid for until he gets a milk check on Dec. 15. So a feed dealer in this area must wait from 30 to 45 days to get paid for dairy feed."

Mr. Fisher started a small feed store, but has been adding something every year. He now has seven mill hands and truck drivers, an outside salesman and a bookkeeper. He recently added some extra room with the intentions of putting in a modern farm store featuring all types of farm and garden merchandise.

He also became an authorized dealer for a line of milking supplies, which include large milk coolers, pipeline milking systems and minor equipment. This will afford him an opportunity to add other dairymen to the growing list.

"My idea of expanding a business," he said, "is to base it on just one thing: service. In feeding a dairy cow or selling a package of rat killer, I've kept that in mind. The customer is always right; his problems must have priority over mine. If I can help him make more money, cut down on overhead or show him a way of doing something easier and faster, then the battle is half won. He will continue to trade with me, and he won't object to my holding out a legitimate profit on what I sell him."

Butler Bulk-O-Mates—Planning to expand and go after profitable bulk feed business in new areas? Here's the newest way to build big-capacity, free-flowing terminal load-out, or country load-out and receiving stations. Bulk-O-Mates are completely "packaged" installations including roof deck, square tanks, hoppers and supporting structurals. You save costly planning and construction time, get into business sooner. Available in tank capacities from 1 to 50 tons. Contact your authorized Bolted Tank Contractor. Or write direct.



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They can't read, but they know it's good news!

PRO-STREP in their starter rations reduces stress setbacks, protects their health

STARTING TIME IS STRESS TIME—To get chicks off to a fast, healthy start—fortify your starter rations with 100 Gm. of **PRO-STREP.**

The first three weeks of life—when chicks are most sensitive to stress conditions in their environment—call for a program of *high-level* fortification of their starter rations.

And—for maximum protection against stress setbacks, there is *no* antibiotic that can equal the effectiveness of **PRO-STREP**...at a lower unit cost. Merck Chemical Division, Merck & Co., Inc., Rahway, New Jersey.

PRO-STREP®
(procaine penicillin and streptomycin in a ratio of 1:3)
with THE MERCK MARGIN OF SURETY

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JOE BROOKS

BY AL P. NELSON

Sales Promotions Pay Off

The December night was bitter cold and there were eight inches of snow on the ground. Molasses Moeller, operator of Joe Brooks' mobile mill and his helper, wiry Frenchy Le Feve, sat in the West Wind Tavern playing sheepshead with a few villagers and farmers. This card game was a favorite pastime of certain old timers in the area and also some of the younger addicts.

"Molasses," cautioned Frenchy, "we had bettair go home soon. We have a beeg list of calls to grind and mix on farms in the mornin'. And maybe we will have to shovel a lot of snow to get into farmyards, too, non?"

Big, broad-faced Molasses Moeller, who could easily lift the rear end of a small truck, grinned. "Right after this hand, Frenchy," he said. "This hand is a lulu."

Moeller and Frenchy were bachelors and they roomed together at Mrs. Nels Anderson's, on whose wonderful cooking they both tended to get fat. But the strenuous activity on the mobile milling unit helped them keep their figures within bounds.

Playing sheepshead in the tavern was fun for both these men, and it was cheap. Only a penny a point, and eleven points made a game. Farmers came into this tavern, too, and when they spotted Moeller and Frenchy often placed mobile milling orders. New farmers, too, got acquainted with the mobile crew and gave them business.

At Mrs. Anderson's boarding house, both men sat on their beds and began undressing.

"Frenchy," said Moeller, pulling off long woolen socks, "when the heck are you gonna change the red underwear for some white stuff like I got. The deer huntin' season is over."

"Change the red underwear?" exclaimed Frenchy. "I think it looks nice. It does something for me. It gets me stirred up. It gets me—"

"Yeah, and it gets me, too," Moeller grumbled. "If you keep wearing it much longer, we had better both undress in the dark. I'm startin' to see red all night in my dreams—all on account of your flashy red longies."

Frenchy looked pained. "Molasses," he said, "let us not fight, non? We are much too goot friends for that. Instead let us fight for more business, for Joe and for ourselves."

"Oh, we're doin' all right," Molasses said, scratching his hairy belly just before he slipped on his flannel pajamas. Our checks are bigger every week, due to extra commissions on what we sell."

"But we are not doing enough!" Frenchy insisted. "In the contest evairy month with the mill we are losing. On the percentage of gain they have won on eight months and we have won only on four months."

Moeller yawned and rolled into bed. The springs squeaked under his weight. "Yeah, well there is only two of us and nine in the mill. No wonder they win. They got a bigger team."

Frenchy slipped his pajamas over his wiry frame. "But my pride is hurt! I want us to win more."

Moeller yawned again. "Golly, it feels good to crawl under the covers. Don't be so ambitious, Frenchy. We're doin' a good job."

Frenchy looked gloomy as he sat pajamaed at the edge of his bed. "They can outnumber us, mon ami, but we can out think them up here." And he tapped his forehead. "And that is what we must do."

"Aw, go to bed," yawned Moeller, his breathing starting to get heavy.

Start Monthly Contests

"Mon Dieu," said Frenchy suddenly, "I have an idea. We can run some monthly contests. That will bring more business."

"I'm workin' hard enough now,"

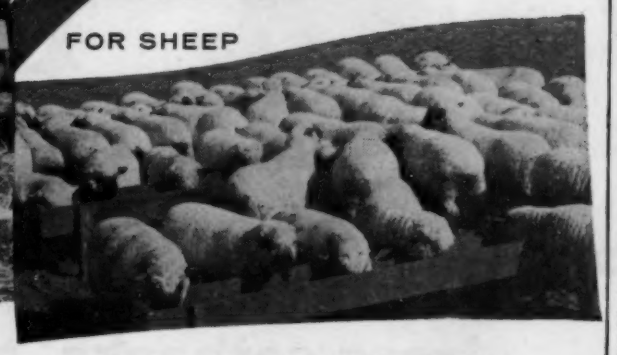
Power Packed DEHY

FOR POULTRY

FOR BEEF CATTLE

FOR DAIRY CATTLE

FOR SWINE



FOR SHEEP

For Every Feed There is a Need for DEHY.

No other single feed ingredient provides as many valuable nutrients, and it is easy and economical to use.

DON'T DELAY—PLACE YOUR ORDER TODAY!

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Why Grain Men Prefer

Owner's viewpoint

ARID-AIRE GRAIN DRYERS

"We have been using ARID-AIRE dryers for the last 10 years at our elevator—we have been completely satisfied in every respect and honestly feel that the dryers have paid us many times over."

KERMIT LYNN, *Manager*
Lake Lillian Farmers Elevator Co.
Lake Lillian, Minnesota

ARID-AIRE is built to last and give trouble-free service, month after month — year after year . . . they pay for themselves!

Write for details of Trial Plan and free folder

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HOLY CATS—'CAN' YOU TOP THIS ONE!

HUTCHINSON, KANSAS—Ellis Stackfleth, Anthony, Kansas, advanced a novel idea for helping get rid of the wheat surplus at the annual convention of the Kansas Association of Wheat Growers. "Let's make our wheat palatable to pets," he suggested during a free-for-all on the surplus. "I am impressed every time I enter a super market in a city by the space given to dog and cat food. This comes in cans and disposal of the cans in turn is a problem to the city folks. Let's find a way to make cans out of wheat so that the cats and dogs can eat them after devouring the contents."

said Moeller. "I don't want to work harder. Holy cow, get to bed."

"We can offer a prize, maybe a free grind, to the customer who gets the most dairy feed grinds from us each month," enthused Frenchy. "And prizes for the most hog and chicken grinds. And maybe a prize for the farmer who buys the most molasses each month, non?"

"You and yer ideas," grunted Moeller.

"I know Joe will like this idea," exulted Frenchy. "We can geeve a prize to the farmer who buys the most per month off the supply truck. Joe likes the travelin' store, non? He weel go for that one."

Molasses Moeller made no reply.

"And farmers like to do some guessing," Frenchy said happily, his thoughts beginning to click. "We can geeve a prize to the farmer who can guess closest to the mileage the mobile he runs every month."

Molasses only grunted at that one.

"And then," Frenchy said happily, his brown eyes shining, his back straight as a ramrod, "we maybe can talk Joe into mailing out a Mobile News bulletin every month to prospects and customers. We can boost the mobile service and also print some good jokes. You know any good jokes, Moeller? Not the kind you tell in the tavern, non?"

"Aw, shut up," moaned Molasses. "I wanna go to sleep."

"Sleep!" exclaimed Frenchy. "Who can sleep when the ideas they run through the head? I wish it was morning now. I am so anxious to tell Joe Brooks. We will make those mill fellows get off their pants to try to beat us. We must win more. Do you hear me, Molasses? We will have everybody in the country talking about the mobile because of our contests and monthly bulletin."

Moeller's only answer was a series of long loud snores.

Frenchy picked up his long red underwear and folded it fondly. "I weel take good care of you," he said. "You keep me warm, and your red color, it excites me. Maybe you have heated up my brain, too, and geeve me all these good ideas. Ah, I weel wear you even in the summair time if you keep on bringing me luck. Who knows? Who knows?"

Contentedly, and with a smile on his dark features, Frenchy turned out the light, crawled into bed and tucked the blankets around his neck and shoulders. He lay on his back staring into the dark.

Then he patted his head. "Ah, when the idea factory he get working, I feel so good. It makes me feel like a man! Snoring? Pfaff! That is for dumbkopfs."

Delphos Firm Plans New Soybean Plant, To Triple Capacity

DELPHOS, OHIO—A contract has been signed between Delphos (Ohio) Grain & Soya Products Co. and French Oil Mill Machinery Co., Piqua, Ohio, for a 500 ton per day soybean solvent extraction plant which will triple the existing plant, announced Floyd E. Hiegel, president and manager of the Delphos company.

The expansion program at the Delphos plant has actually been under way for some time, Mr. Hiegel said. It purchased a 1200 h.p. boiler last year, constructed new tracks and a preparation building. New grinding equipment, sifters and meal dressing screens will be installed. A. O. Smith glass-lined storage tanks have been erected for meal storage and foundations have been poured for the extraction equipment. The major equipment has started arriving and operation of the plant will begin next spring.

Delphos Grain & Milling Co., predecessor of the present firm, was formed by Mr. Hiegel in 1944. Original capacity was about 40 tons per day processed in two mechanical screw presses. In 1950, an 80 ton Anderson solvent plant was put in operation. This plant was expanded in 1957 by the installation of a rotocell extractor, and in 1958 by a desolventizer-toaster.

According to Mr. Hiegel, this latest move by the Delphos plant will give the operation an over-all potential capacity of 900 tons per day. Along with a new extractor, have been added modern truck and car loading equipment, a new truck loading dock, with the meal being conveyed by four pneumatic air systems at a rate of 50 tons per hour.

Engineering Management, Inc., of Chicago, is the firm acting as engineer and consultant for the over-all project.

The soybean crop in Ohio has steadily increased from 22 million bushels produced in 1944 to a 1959 level of 38 million bushels—an increase of over 70%. Over half of the Ohio crop is raised within a 50 mile radius of Delphos, according to Mr. Hiegel.

Sees Farmers Rising Up Against Subsidies

BOW, N.H.—"The day is coming when farmers will rise up against the subsidy programs as a whole in the U.S.," Sen. Styles Bridges (R., N.H.) told stockholders and guests of the Merrimack Farmers Exchange, Inc., recently.

The senator, a pioneer stockholder in the exchange, told the group at its 39th annual meeting:

"This nation can not continue to pile up surpluses, pay out billions and continue to help 80 nations from these surpluses without jeopardizing the future of the U.S."

Exchange officials reported "another year of struggle against inflation, declines in poultry business and fewer people engaged in dairying." The exchange manufactures livestock and poultry feeds at its plant here and operates more than a score of retail stores throughout New Hampshire.

to meet competition easily and economically . . .

CK Don't Mix Without Econoloc

(Soyoil and lecithin carried on Soymeal)

Once increased fat content in rations was out of reach of many mills because of costs and difficulty of handling. No more.

New Econoloc is easy to use—without mess and without special equipment. It is ready to use, a granular free flowing source of vegetable fat (lecithin, Vitamin E, and Tocopherol) for all livestock and poultry feeds. Its odor is pleasant, its quality uniform.

Here's the economical way to provide your customers feeds with all the health and palatability advantages found in increased fat content. Comes packed in 50 lb. moisture-resistant bags.

Better get the full story and the good news about Econoloc's price today.

Is another champion from the CK line of feed ingredients which also include

- Econolass — Blackstrap molasses dehydrated on Soymeal.
- Econosol — Fish solubles dried on soymeal.
- New Econoferm — Multiple cultured product absorbed on soymeal.

CK Processing Company

REDFIELD, IOWA MUSCATINE, IOWA

THE BEST FRIEND YOUR FEED HAS EVER HAD!

WHEN YOU GO BULK—BE SURE YOU

GET A BID ON BULKANIZER

low initial investment, assured years of trouble-free service make Bulkanizer your best buy

Get competitive bids, by all means. Then visit your Bulkanizer dealer and get his bid. Compare the prices. Compare the features. You'll see then, why Bulkanizer is your best buy. You'll learn, too, why Bulkanizer is so popular with other feed dealers who've gone bulk.

WE'LL SEND YOU NAMES

Selling feed in bulk is profitable. But, unless you have the right bulk truck body, your profits can be eaten up in excessive repair and maintenance costs. Not so with a Bulkanizer. But we want you to be absolutely certain this is true. So, if you'll simply write us a letter, we'll gladly send you the names of other feed dealers in your area who've gone bulk with Bulkanizer. Talk to them. Find out first-hand how Bulkanizer can give you the dependable service that means more profit from your bulk feed operation.

Write us today. We'll also send you the name of your nearest Bulkanizer dealer so you can get his bid at your earliest opportunity.

Bulkanizer

NORTH AMERICAN MFG. CO.
Sioux City, Iowa

Trademarks Issued by U.S. Patent Office

EDITOR'S NOTE: The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Baby Pig Creep, in capital letters, for medicated baby pig feed containing antibiotics. Filed Oct. 17, 1957, by Central Soya Co., Inc., Fort Wayne, Ind. First use Oct. 14, 1957.

Vita+Plus, in capital letters, for vitamin fortifications to be used in the preparation of poultry and livestock feeds. Filed Aug. 12, 1958, by Vita+Plus Corp., Madison, Wis. First use June 15, 1950.

Microphene, in capital letters, for dewormer preparations for sheep, goats and cattle. Filed March 30, 1959, by William Cooper & Nephews, Inc., Chicago, Ill. First use in February, 1959.

Coopa-Fine, in capital letters, for dewormer preparations for sheep, goats and cattle. Filed March 30, 1959, by William Cooper & Nephews, Inc., Chicago, Ill. First use in February, 1959.

Liv-A-Snaps, in hand-drawn letters, for animal food for cats and dogs. Filed May 14, 1959, by Dean W. Carlson, d.b.a. Terry Lee Products, St. Paul, Minn. First use Oct. 24, 1958.

Acrostatina, in capital letters, for antibiotic preparation. Filed May 13, 1959, by American Cyanamid Co., New York, N.Y. First use April 28, 1959.

Mac-O-Lac, drawing of cowboy on steer and hand drawn letters with lariat enclosure, for livestock and poultry feeds and additives to such feeds. Filed Sept. 3, 1957, by R. H. McMurtirie, d.b.a. Macbilt Western Yeast Products Co., Spokane, Wash. First use Dec. 7, 1954.

Design, emblem with words Cooperative Mills, Inc. in capital letters, for feeds for animals and poultry. Filed Feb. 6, 1958, by Southern States Cooperative, Inc., Richmond, Va. First use in January, 1944.

VPC, in capital letters, for animal feed supplements consisting essentially of vitamins and minerals. Filed Nov. 26, 1958, by Vitamineral Products Co., Peoria, Ill. First use July, 1929.

Vitabone, in capital letters, for animal vitamin mineral tablets. Filed June 12, 1959, by Bibona Products, Inc., New York. First use June 8, 1959.

Vibona, in capital letters, for animal vitamin mineral tablets. Filed June 12, 1959, by Bibona Products, Inc., New York. First use June 8, 1959.

Zoamix, in capital letters, for preparation for the control of coccidiosis in domestic animals and birds. Filed March 13, 1959, by Dow Chemical Co., Midland, Mich. First use April 9, 1958.

Pig Prymer, in capital letters, for preparation containing vitamins, minerals and antibiotics which is administered to hogs. Filed May 21, 1959, by J. R. Watkins Co., Winona, Minn. First use April 10, 1959.

Hidden Hunger, in hand drawn letters, for vitamin and mineral feed supplement for poultry and animals. Filed May 26, 1959, by O. W. Meyer, d.b.a. O. W. Meyer Laboratories, Napoleon, Ohio. First use April 14, 1959.

INCORPORATION

LITTLE ROCK, ARK. — Consolidated Egg Farms, Inc., Tyronza, Ark., has filed articles of incorporation with Arkansas Secretary of State C. G. Hall to operate a "poultry and egg business." The firm was authorized 5,000 shares of $20 stock and listed $9,000 as its paid-in capital. Incorporators were Nathan H. Galer, Jerry Shefos and Nick J. Fillon, all of Memphis, Tenn. W. H. Schaller of Tyronza was listed as the company's agent.

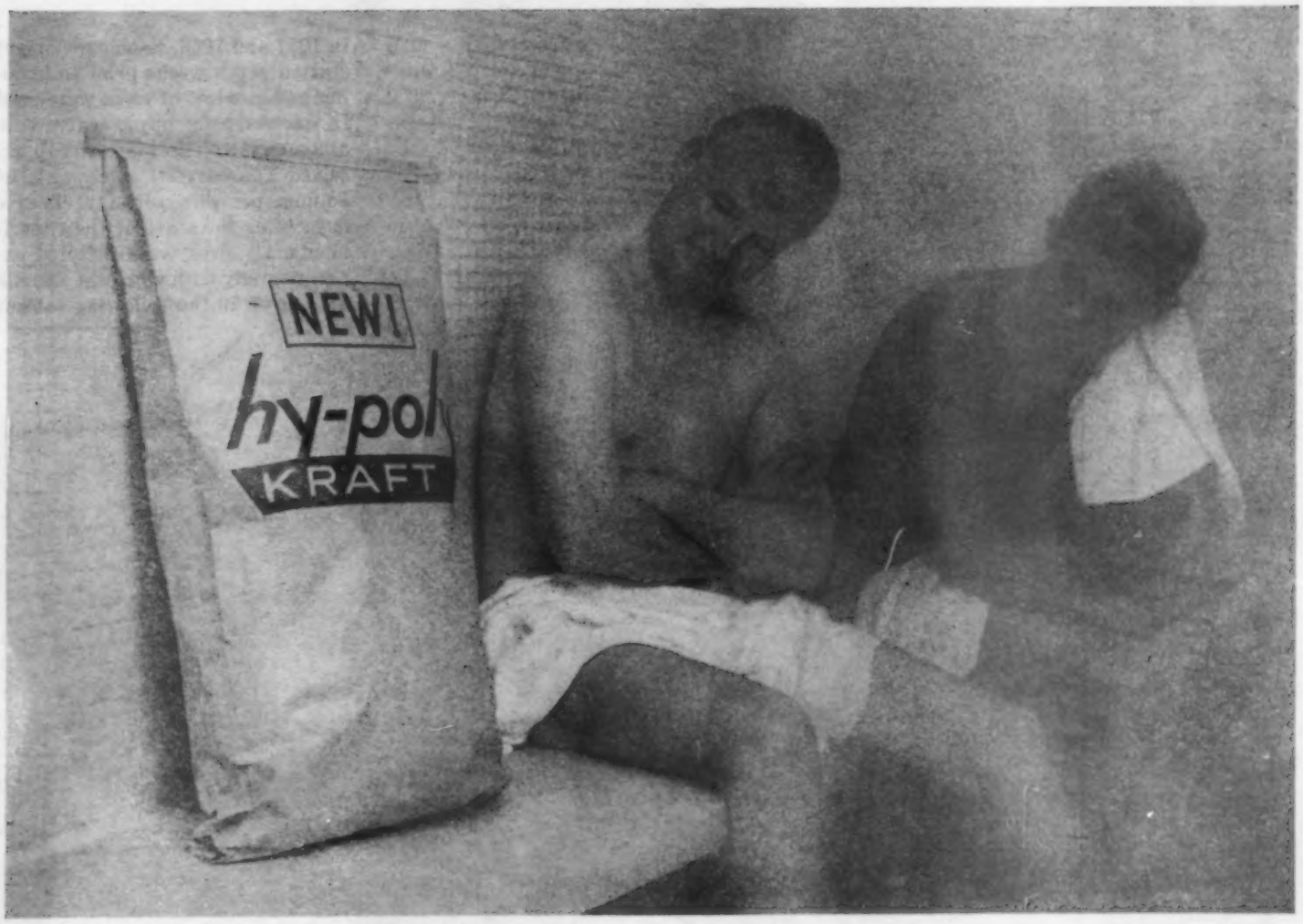
To serve formula feed mixers...

Kansas Soya produces a quality product from the CREAM of the soybean crop...

...then schedules shipments for dependable on-TIME delivery, from our mill to yours.

Kansas Soya Products Co., Inc.
Phone Dickens 2-7270
Emporia, Kansas

Now International Paper saves you $5 to $16 per thousand PE multiwalls!



Read why new humidity-proof "Hy-poly" kraft makes medium and low-density polyethylene sheets extravagant!

THE multiwall bag you see taking a Turkish bath in our picture contains *calcium chloride*.

We steamed this new Bagpak® multiwall in 95% relative humidity at 120° F. for 48 hours. (Unprotected, under these conditions, this chemical takes on 2½ times its weight in water in about an hour!)

But when we opened up the bag, the thirsty crystals spilled out as though they had been stored on the Sahara!

And Bagpak's new Hy-poly kraft *saves you money*. You stand to save from $5 to $16 per thousand multiwalls!

That's because new Hy-poly kraft is so superior to medium and low-density PE sheets that you get equal, if not greater, moisture-vapor protection from a coating approximately *half as thick!*

Extensive laboratory tests prove that this dramatic new barrier sheet is superior in *every way*. Write us today for samples.

See how calcium chloride protected by Hy-poly kraft Bagpak, pours after 48-hour steam bath!

Bagpak Division **INTERNATIONAL PAPER** New York 17, N.Y.

CYANAMID FIRST WITH NEW WAY TO REDUCE VIBRIOSIS LOSSES

Feed manufacturers can now make disease claim for reducing incidence of vibrionic abortion in sheep —with feeds containing Aureomycin

Vibriosis costs *money!* In certain areas, outbreaks of this most-feared of sheep diseases have resulted in losses as high as 70% of the lamb crop.

Now...for the first time...you can offer a really effective way to reduce vibriosis losses. Offer feeds containing AUREOMYCIN® and carry a disease claim for reducing the incidence of vibrionic abortion on your feed tag. Government approval of such a disease claim, with AUREOMYCIN fed at the level of 80 milligrams per ewe per day, has recently been given.

Experiments show Aureomycin cuts losses

The use of AUREOMYCIN as a preventive for vibrionic abortion in sheep has been investigated for a period of two years by the Idaho Agricultural Experiment Station. Two experiments were conducted in 1957 and 1958. Each experiment started seven weeks prior to lambing and two lots of ewes were used in each. One group received no AUREOMYCIN. The other group received AUREOMYCIN at the rate of 80 mg. per ewe per day. Twelve days after the start of the experiments, all ewes were infected experimentally with vibriosis. Results are shown in the following tables:

Experiment I

	Lot No. 1 Without AUREOMYCIN	Lot No. 2 With AUREOMYCIN
Number pregnant ewes	18	17
Normal lambings	7	14
Abortions	11 (61%)	3 (18%)

Experiment II

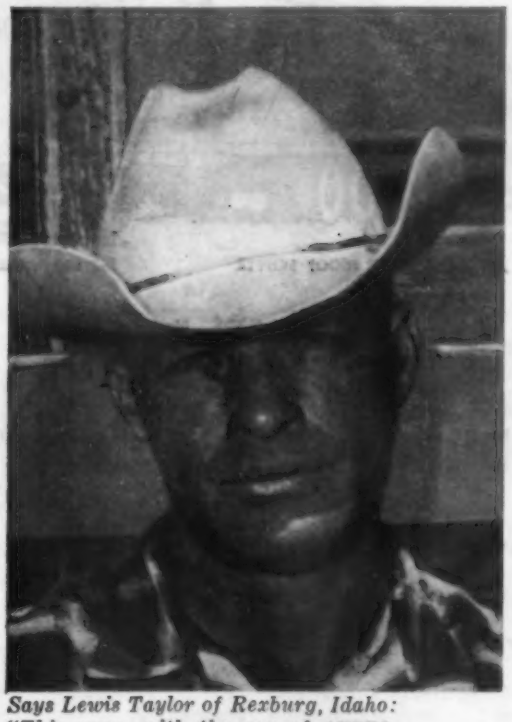
	Lot No. 1 Without AUREOMYCIN	Lot No. 2 With AUREOMYCIN
Number pregnant ewes	21	20
Normal lambings	6	17
Abortions	15 (71%)	3 (18%)

Says Orvin Galbraith of Thornton, Idaho: "I used AUREOMYCIN to help control vibriosis. Because of AUREOMYCIN, I turned out 135 lambs for every 100 ewes. In 1951 when we had vibriosis and didn't use AUREOMYCIN, we got only 50 lambs per 100 ewes."

Says Bill Siddoway of St. Anthony, Idaho: "With AUREOMYCIN, our ewe losses have been reduced 50% — abortions cut to a minimum. Lambs are healthier. Reduction in ewe losses alone more than paid for the cost of AUREOMYCIN."

In reporting these results to the Idaho Wool Growers Association, the investigators said: "In evaluating these results, it should be remembered that every ewe was inoculated with a massive dose of the infectious agent. This severe exposure would rarely occur under field conditions. This suggests that antibiotic feeding will be even more effective in actual field use than these results indicate."

If you are a feed manufacturer serving an area where vibriosis is a costly problem, offer your customers this new way to cut losses. Make a feed that will furnish the recommended level of AUREOMYCIN. Write for more detailed information on the experiments conducted with AUREOMYCIN in the control of vibriosis. American Cyanamid Company, Agricultural Division, New York 20, N. Y. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*



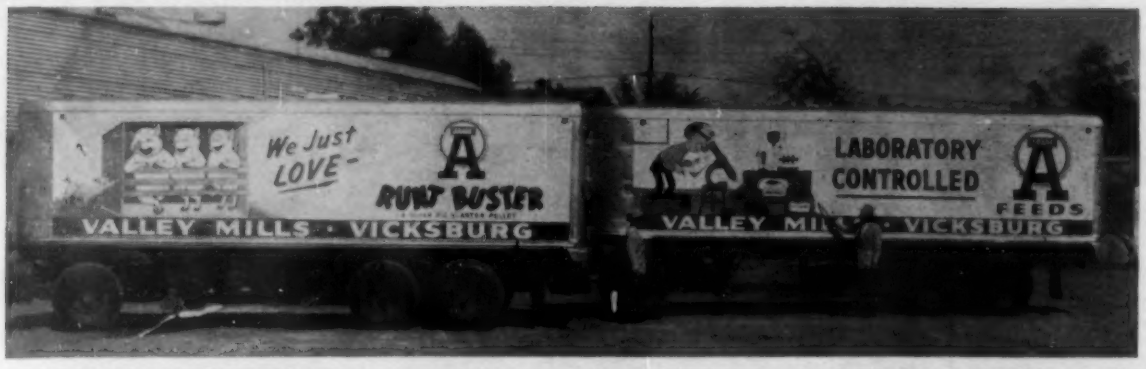
Says Lewis Taylor of Rexburg, Idaho: "This year, with the use of AUREOMYCIN, we reduced our ewe death losses 70%. We had bigger and stronger lambs with minimum losses from vibriosis"

Says Dick Egbert of Tetonia, Idaho: "AUREOMYCIN brought our infection troubles almost to a standstill. It eliminated three-fourths of all death losses in ewes and lambs."

CYANAMID

AUREOMYCIN
IN FORMULA FEEDS

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE



VAN-BOARD ADVERTISING—Here are two of the vans decorated with a new type of mobile advertising by Valley Mills of Vicksburg, Miss. These signs promote the Grade A pig starter, "Runt Buster," and emphasize humorously the quality control maintained on feeds. Looking over the van are (left) Harry R. Gillespie, merchandising manager, and W. C. Roberson, sales manager.

Mississippi Mill Tries Mobile Advertising

VICKSBURG, MISS. — Van-boards —a new idea in mobile advertising and a new name for it—have been reported by Valley Mills of Vicksburg, Miss.

For the last two years, Valley Mills has used cartoon-type advertising on a large number of billboards to promote Grade A feeds. These cartoons attracted attention of highway travelers and created much comment, says the firm.

Because of the reaction to the cartoon advertising on the billboards, the sales department of Valley Mills conceived the idea of converting the fleet of Grade A feed trucks into "rolling billboards." In their opinion, the "rolling billboards," which travel over highways in Louisiana, Mississippi and Alabama, would reach many more people than the stationary billboards.

One or two trailer van-units were painted with these billboard-sized cartoon ads, a different advertisement on each side of the truck, and were routed over different territories for several weeks. The reaction to these "Grade A chuckle wagons" was even greater than had been anticipated, the firm says. Grade A truck drivers vied with each other for these cartoon decorated vans.

Because of response to this type of advertising, Valley Mills is now in the process of originating new cartoon layouts and repainting all its truck units with van-board advertising. Different feeds are being promoted using original cartoons to promote each feed.

SEEKS REELECTION

SEAFORD, DEL.—Earl M. Tull, state senator, Seaford, announced recently that he will seek reelection to the Delaware Legislature from the second district of Sussex County. Sen. Tull is president of Tull Brothers, Inc., Tull Feed Co. and Farm Equipment Co. of Salisbury, Md. He is also a director of Huston-Culver Fertilizer Co.

Good Hog Management Stressed in California

LOS ANGELES—Proper facilities and good management can mean profitable hog production in California, H. W. Schwalm, Agricultural Extension Service, said at the 41st annual convention of the California Farm Bureau Federation here recently.

"We have the climate, the feed and a ready market in California," he said, "and there is some price advantage to be gained by marketing a real meat-type hog," instead of a lard producing animal. He told potential raisers that if the hog business increases the state would put more farm advisors in the counties to work with hog producers.

Special emphasis has been placed during the year on hog feeding, Mr. Schwalm said, such as finishing hogs for market; determining the value of antibiotics and/or dynafac in a fattening pig's ration and comparing the nutritional value of soybean meal with fish meal and meat scraps.

Studies are also planned, he said, on the economics of the swine industry.

Premier Peat Moss Opens New Factory

NEW YORK—Premier Peat Moss has expanded production, building a sixth Canadian factory.

A large, newly-opened bog area is rapidly reaching production status with the building of the sixth factory for processing and packaging Premier Peat Moss, officials said.

The firm's peat moss bog areas and six factories all are located in the middle of the Gaspe Peninsula, Province of Quebec, Canada, with Riviere Du Loup as the administrative center for their production.

MOLASSES

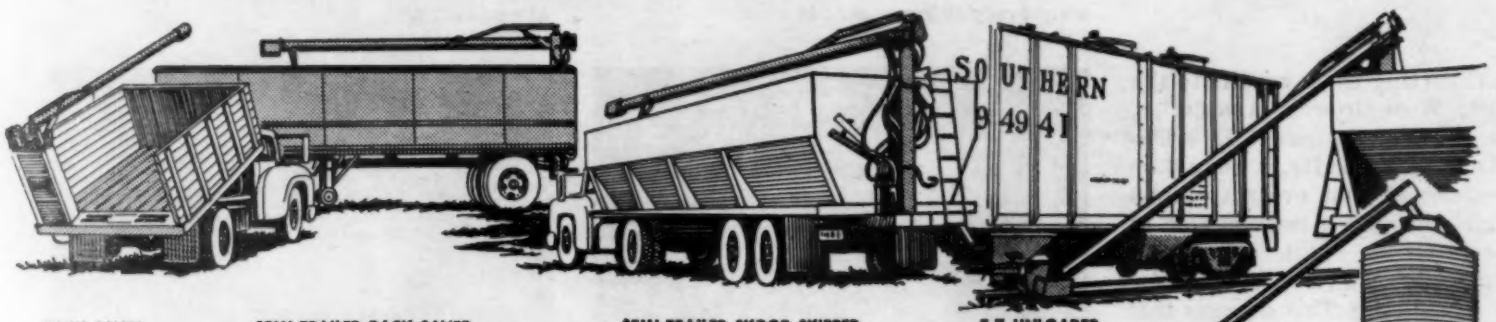
BLACKSTRAP AND INVERT

CZARNIKOW-RIONDA COMPANY

Importers and Brokers

106 WALL STREET, NEW YORK 5, N. Y. Telephone: HAnover 2-8220

Terminal Facilities: Mobile, Ala., Tuscaloosa, Ala., Freeport, Fla., Nebraska City, Neb., Corpus Christi, Tex.



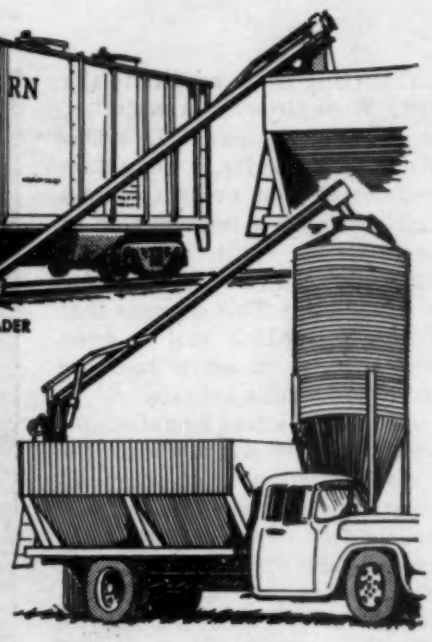
BACK SAVER SEMI-TRAILER BACK SAVER SEMI-TRAILER SKOOP SKIPPER E-Z UNLOADER

Only PAMCO Unloads AND Loads To SPARK Booming Bulk Sales!

"Pamco — our best business booster" is a common phrase in the bulk industry today. Pamco's reputation is founded on combining quality with simplicity, yet priced reasonably. Pamco makes handling sacks as obsolete as the scoop shovel. Shrinks your overhead costs while sparking new business . . . takes the backache out of customer service.

Back Saver . . . attaches to any grain box. Exclusive unloading and loading anywhere, anytime. Pellets handled with minimum breakage. Smooth hydraulic operation.

Skoop Skipper . . . tank stabilization. Standard 2, 3, or 4 compartment units. Pamco positive seal assures against leakage of materials. Dispersing auger for loading leads into each compartment. Double gate per compartment standard for each unit.



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Protein and Energy for Layers

"Protein and energy together make up over 90% of the total cost of the laying feed. Therefore, any changes for better economy that we can make with these two components of the ration will be extremely important."

By Dr. M. L. Sunde
University of Wisconsin

EDITOR'S NOTE: In this discussion of formulating poultry rations, Dr. Sunde emphasizes the effects of varying protein and energy levels, and protein-energy relationships from the standpoint of performance and cost. The author is a professor of poultry husbandry at the University of Wisconsin. He holds an undergraduate degree from South Dakota State College, and an M.S. and Ph.D. degrees from the University of Wisconsin. He has written numerous scientific articles on protein and energy for chicks and layers, and is chairman of the Informal Poultry Nutrition Conference at the present time.

Anything a poultryman can do to reduce the cost of his laying ration without lowering the performance of his hens is important to the poultry industry. If poultry folks in the U.S. could reduce the cost of producing a dozen eggs by only 2¢, it could save them almost $120 million.

Dr. M. L. Sunde

That is just peanuts next to our national debt, but to me it is an awful lot of money. This saving of 2¢ doz. eggs could come from saving 40¢ cwt. of laying mash. It could also come from decreasing the pounds of feed needed per dozen eggs from 5 to 4.4. A third way to do this is to reduce the cost of raising a pullet by 30-35¢. Any one or a combination of all three things can be done with a properly managed flock of hens.

Feed costs make up approximately 60-65% of the total cost of producing eggs. They make up about 80% of the "out of pocket" costs.

TABLE 2. First Basal Diet

	Per cent
Ground yellow corn	42
Wheat bran	10
Wheat middlings	10
Ground oats	10
Dried whey	10
Alfalfa meal (20% protein)	10
Iodized salt	0.5
Calcium phosphate, dibasic	2.0
Feeding oil (1500 A-300 D/gm.)	0.5
Crude soybean oil	5.0
Choline chloride	0.07
Penicillin G, procaine	0.001
L arginine HCl	0.05
DL phenylalanine	0.05
Manganese sulfate	0.022
Vitamin mixture*	+

*Supplied the following vitamins per ton of feed: riboflavin 6 gm., thiamine HCl 4 gm., Ca. pantothenate 15 gm., niacin 100 gm., pyridoxine HCl 4 gm., menadione 0.5 gm., biotin 0.2 gm., vitamin B_{12} 0.004 gm. and folic acid 4 gm.

TABLE 1. The Effect of Energy Level on Growth, Feed Efficiency and Cost of Growing Hybrid Pullets*

	Pullet weights		—Feed/gain—		Feed cost/bird		Average
	4 weeks	20 weeks	0-8 wk.	8-20 wk.	0-8 wk.	8-20 wk.	age to first
P.E./lb.	gm.	lb.	lb.	lb.	cents	cents	egg days
691	296	3.6	3.9	6.7	22	78	170
801	294	3.7	3.5	6.0	22	73	170
894	299	3.8	3.1	5.1	21	69	169
964	289	3.8	3.0	4.9	18	65	171
1043	285	3.9	2.8	4.3	19	64	168
1125	253	3.6	2.9	4.4	18	72	173
1207	232	3.3	3.1	4.6	19	69	177

*Turk, Bird and Sunde.

Protein and energy together make up over 90% of the total cost of the laying feed. Therefore, any changes for better economy that we can make with these two components of the ration will be extremely important.

We can break these two factors down further and we find that energy costs the poultryman approximately 50% of his total feed cost. Protein costs about 40% of the total. This means that the vitamins and minerals do not contribute much to the cost of the ration, but of course do influence the performance of the diet.

The ratio of calories to protein is extremely important economically for turkey poult and broiler rations. Fortunately, this ratio is not as critical for the laying hen, but we still can't forget about it because the same principles are operating.

Protein and energy are so closely related that it is impossible to describe one without the other. However, in some of our more refined experiments we have worked with only one or two energy levels and a few protein levels in order to try to simplify this relationship somewhat. Really what is involved, of course, is the ratio of one amino acid in the protein to the other amino acids, and they are in turn all related to the energy content of the diet. As is to be expected, environment may also be an important factor.

PROTEIN ENERGY RELATIONSHIPS IN GROWING PULLETS— Several experiments have been conducted to determine the effect of energy and protein on growth and other economic factors in growing replacement pullets. Because so much information is available on protein-energy needs during the first few weeks of a chick's life, this early period has not been worked with extensively in these pullet experiments. Birds in many instances were started at eight weeks.

The data in Table 1 show the results of using different energy levels with constant protein levels. This, of course, shifts the protein:energy ratio as the energy is increased. The pullets were all fed a 20% protein diet the first eight weeks, and a 15% protein diet after that time. With 20% protein, the use of 1100-1200 calories reduced the growth rate at four weeks. Efficiency, however, was increased as energy increased until about 1050 calories were used.

Note the contrast between 691 calories and 1043 in feed/gain to eight weeks. This illustrates clearly the advantage in feed intake for the higher energy diets. Up until the birds were eight weeks old, the 960 calorie diet produced the lowest feed cost per pullet. Even the level of 1125 calories was good in this respect.

With high calorie diets and 15% protein, the age to first egg was increased. This is noted especially when the ratio between energy and protein exceeded 70. In a later experiment the pullets fed 1250 calories and 20% protein from 8-15 weeks, and 17.7% protein from 15-20 weeks averaged about three pounds at 20 weeks of age. If the protein was dropped to 13% during the last five weeks, the pullets' average weight dropped about ¼ lb.

When 13% protein or even lower levels were fed with lower energy levels, this was not observed. This shows that while a wide range of energy levels and protein levels can be used successfully for rearing replacement pullets, reasonable care must be taken to keep the ratios below 70.

With high energy diets, feather eating is a real problem. Normally, the first symptom which can be noticed is that the pullets eat all the small feathers in the pen. The following symptoms usually appear in this order as the condition becomes more severe:

(1) The pullets eat the molted body feathers.

(2) The pullets eat the molted main wing and tail feathers.

(3) They start to eat feathers off the breast or on the underside of the neck.

(4) They start picking feathers about the tail-head at about the same time as the feathers around the neck.

(5) They start eating flesh about the tail.

We have not been successful thus far in preventing feather eating (symptoms 1, 2 or 3) with very high energy feeds even with high protein levels. With very high protein levels (20-25% from 8-20 weeks), the picking has been markedly reduced.

EFFECTS OF DIFFERENT ENERGY AND PROTEIN LEVELS ON PERFORMANCE IN THE LAYING HOUSE— Earlier experiments have indicated that any time the pullet is thrifty and healthy when she is placed in the laying house, she will not show the effects of previous dietary treatment. Once she starts to

TABLE 3. The Effect of Energy and Protein:Energy Ratio on the Performance of Hens (S.C.W.L.)

Prod. energy per lb.	C/P ratio	% Prod.	Gain in weight, lb.	Av. liver weight, gm.	% Fat in liver	Lb. feed doz. eggs
848	55	71	.8	47	32	4.6
930	60	61	.4	49	31	5.2
974	63	62	.6	46	39	5.1
996	66	71	.6	42	38	4.6
1029	68	63	1.1	54	38	5.3
1110	74	71	1.0	50	39	4.8
1190	79	58	1.4	63	49	4.5

FIGURE 1. This picture shows pullets fed on the following dietary program (low protein): 0-8 weeks, 15% protein; 8-15 weeks, 13% protein, and 15-22 weeks, 11.3% protein.

TABLE 4. The Effect of Energy Level on Egg Production, Efficiency, Egg Cost, and Body Weight* (Hybrid Pullets)

Prod. energy per lb.	% Prot.	C/P ratio	% Prod.	Lb. feed dozen	Feed cost doz., cents	Body weight 62 weeks
697	15.9	44	71.6	4.7	16.0	3.8
836	16.4	51	68.0	4.7	15.8	4.5
931	15.3	61	71.7	4.3	15.1	4.5
1005	15.4	67	65.2	3.9	13.5	4.6
1082	16.7	65	68.9	4.1	15.2	4.9
1160	17.8	65	77.4	3.3	13.6	4.3
1240	18.9	66	70.0	3.2	13.3	4.4

*Turk, Bird and Sunde.

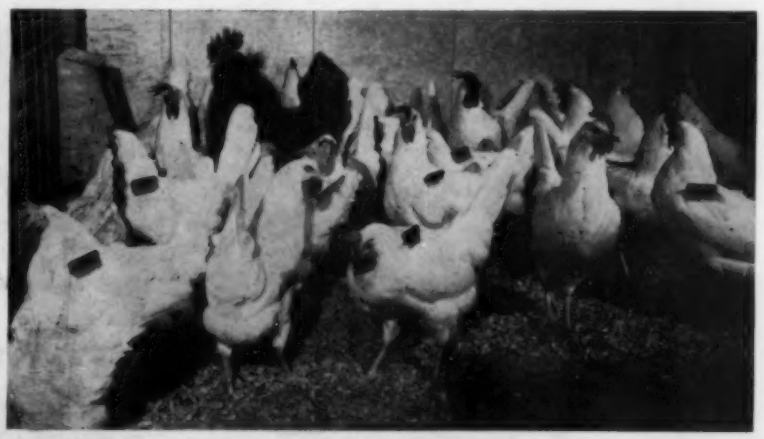


FIGURE 2. This picture shows pullets fed the control dietary program: 0-8 weeks, 20% protein; 8-15 weeks, 15% protein, and 15-22 weeks, 15% protein.

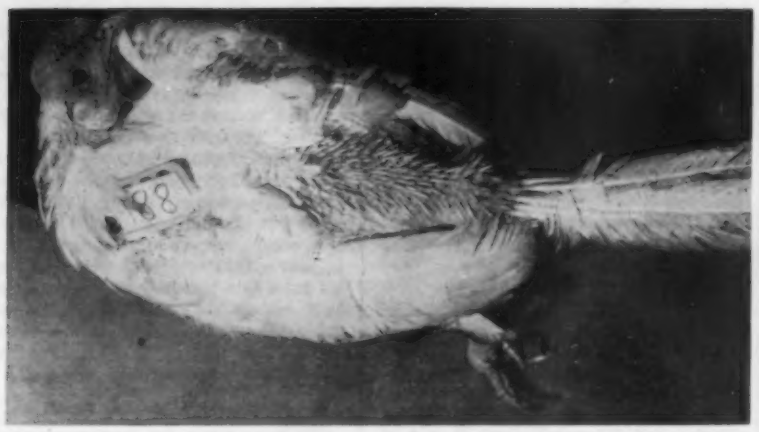


FIGURE 3. This hen was fed a very high energy diet and 22% protein. She now has grown a few pin feathers on her back since being placed on a medium energy ration. Hens maintained on a very high energy diet will also grow feathers back when they molt.

TABLE 5. The Effect of Varying the Protein and Energy on Performance of Hybrid Pullets in Cages* (1957-58—24 Weeks Production)

% Protein	Prod. energy C.	% Prod.	Lb. feed dozen
10.1	785	66.2	4.86
10.1	930	65.0	4.77
10.1	1075	56.2	4.48
12.2	788	72.6	4.89
12.2	933	59.7	4.43
12.2	1078	70.6	4.34
14.3	768	68.0	4.77
14.3	913	79.0	4.06
14.3	1058	69.1	3.89
16.3	777	73.2	4.17
16.3	922	69.4	4.55
16.5	1067	65.8	4.22
18.3	787	64.3	5.06
18.3	932	75.9	4.35
18.3	1077	58.8	3.91
Control diet		55.3	5.51

*Turk and Sunde.

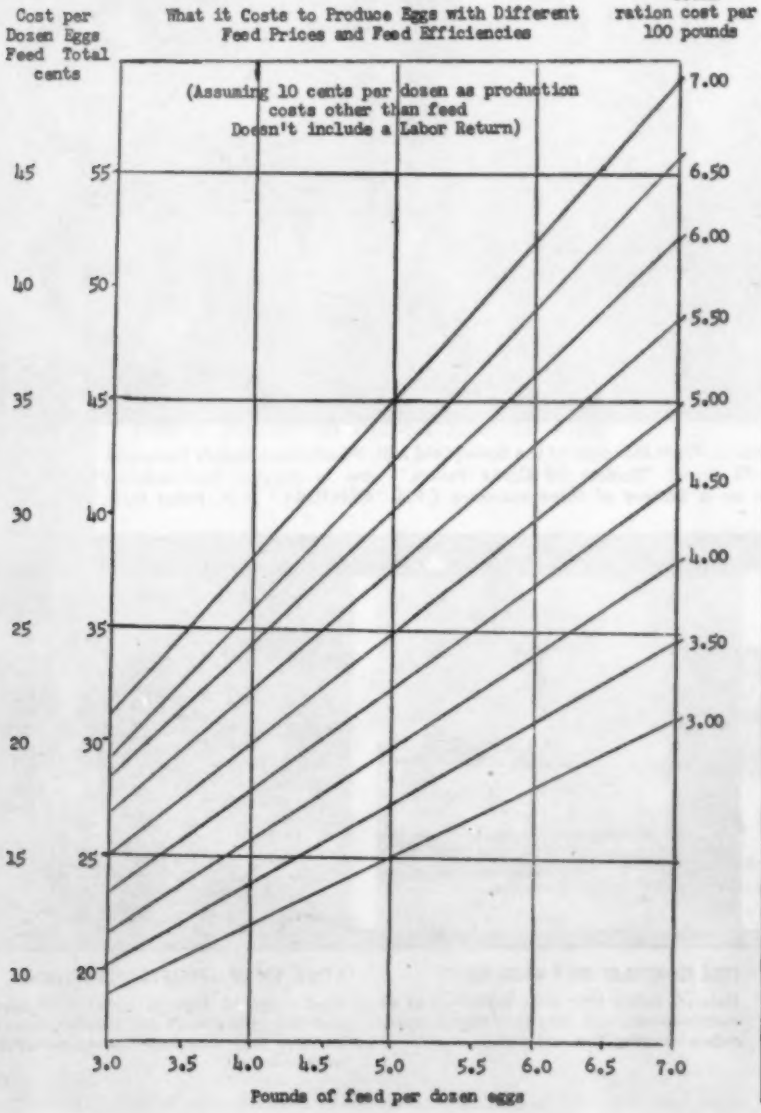
lay she will lay at a rate compensatory to her genetic ability, the nutritional value of the feed, and the condition of her surroundings.

During the early 1930's several workers in this country and in foreign laboratories worked on the protein needs of the laying hen. They arrived at a figure of from 12-14%. Later work in this country showed a need for about 15%. This has been the recommendation of the National Research Council. In 1954 we began work to re-examine the protein requirements of the laying hen. Since then we have continued to accumulate data with various types of diets.

Theoretically if a hen were 100% efficient in transferring protein from feed to eggs, only 6.1% protein would be required. This assumption is based on a 2 oz. egg (12.1% protein) being laid every day. The hen is allowed ¼ lb. of feed per day (25 lb. per 100 hens/day). In many instances slightly more than ¼ lb. of feed is consumed. Under these assumptions, 6% protein would be more than sufficient since hens do not normally lay every day. A requirement of 6% protein is, of course, not realistic because chickens are known to have requirements for maintenance. Therefore, the requirement is greater than 6%.

A diet containing about 940 cal-

FIGURE 4



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ories of productive energy (1400 metabolizable energy) and about 12% protein was used as the basal diet. It is shown in Table 2. This diet certainly wouldn't be considered a modern one, but the amino acid make-up was quite good. This diet has been modified recently by removing the dried whey and the amino acids, and has given fairly good results.

The pullets in Figures 1 and 2 show a comparison between this modified diet and the control diet. Note that the pullets look the same and thus far have laid the same.

The results obtained with the diet shown in Table 2 are given below. Note that the percent production was approximately the same for all protein levels:

	% Production
Basal diet (12.0% protein)	70.6
13.4% protein	76.4
14.7% protein	73.6
15.8% protein (control diet)	72.2

Fish meal was used to raise the protein level. This replaced corn in the basal diet (Table 2). Egg weight or body weights in this experiment were lower with the low protein diet than with the other diets.

In other later experiments corn starch was used to lower the protein content even more. When this was done, the hens fed 12.3% protein or less did not lay as well as the hens fed the higher protein levels.

In the later experiments both protein and energy were varied and data collected for long periods of time. In all, five long-term experiments have been conducted along this line.

The data in Table 3 show the effects of energy levels from 850-1200 calories of productive energy. The protein was held constant. The C/P ratios are also indicated. Production in this experiment was equally good with 850, 1000 or 1100 calories. The production on the highest energy level, 1190 calories, was below the other groups in the experiment. Keep in mind, however, that the C/P ratio was 79, and that protein was held at about 15%.

Pullets can lay well on low energy diets, and they can lay well on high protein diets. This can be seen from Table 4. The hybrid pullets receiving about 700 calories and about 16% protein averaged 71.6% production for the year. In spite of the relatively low energy level, only 4.7 lb. of feed were required per dozen eggs. This was on a C/P ratio of only 44.

Pullets in this experiment were fed 1240 calories and 18.9% protein, and averaged 70.0% and required only 3.2 lb. of feed per dozen eggs. This ration contained 10% added fat.

Cause of Bare Backs

Whenever we have used 10% of fat or more in laying rations, we have had bare-backed hens. A typical hen who has a bare back and is now in the process of growing some pin feathers is shown in Figure 3. The fact that the bird is bare-back is not serious. In fact, it may assure us that we are using high energy feeds. We are concerned, however, about cannibalism which can also occur on high energy diets.

In another experiment pullets were fed levels of protein from 10.1 to 18.3% with energy levels from 785-1075. In general, at least 12.2% protein was required for normal egg production. These data are shown in Table 5. Note, however, that the pullets fed only 10.1% protein and the lower energy levels averaged 65% production and required less than 5 lb. of feed per dozen eggs.

Several other workers have also reported on the use of low protein diets for layers: Thornton, Blaylock and Moreng from the Colorado Experiment Station, Pope and Schaible of Michigan State University, Adams, Krautmann, Hauge, Mertz and Carrick of Purdue, Waibel of Minnesota, and Naber of the Ohio Experiment Station all have reported that less than the National Research Council recommendation will work.

Work from Texas, Louisiana and Alabama has indicated that levels of protein as high as 18% in one instance are required for optimum performance. There is a lot of difference between this figure and the 12-13% that is indicated by our work and some of the other northern stations. Perhaps temperature and humidity account for these differences; only further research will tell us this.

It appears that as the energy level is increased beyond certain limits—say 1100 calories of productive energy per pound—additional protein is needed.

Amino acid additions may also enter into this picture. Data are available which suggest that with all grain diets that the additions of methionine and lysine will improve egg production and egg size.

Raising the Energy Level

By increasing the energy content of the diet we can reduce the number of pounds of feed required per dozen eggs. This will cheapen our ration if the additional energy can be obtained at a reasonable cost. We can reduce the protein level under many sets of conditions. This also will reduce

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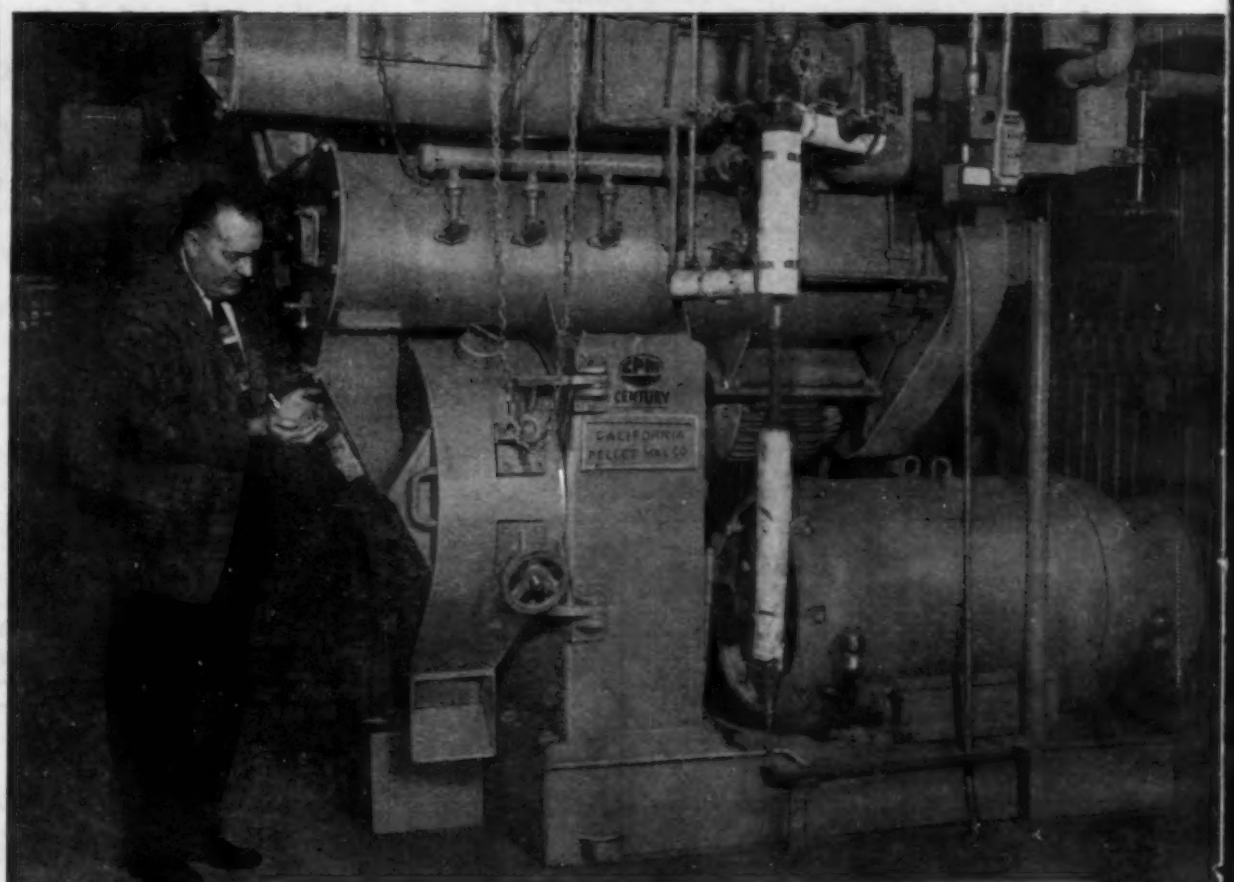

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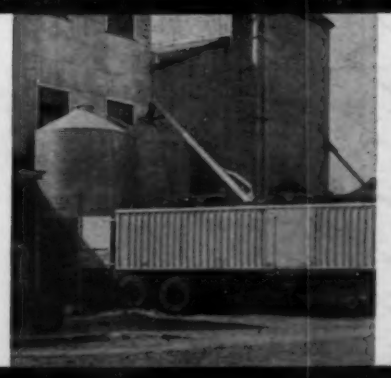

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the cost of the ration. If, however, we raise the energy level to extremely high levels, then we need to provide some additional protein.

The thing poultrymen are most interested in is the income from eggs per dollar spent for feed. This means that feed cost is very important. Protein and energy are our major cost items. It also means that pounds of feed per dozen eggs is important. As yet there are not sufficient data available to prove that efficiency at high energy levels isn't improved by higher protein levels. This information is being collected, but only time will tell.

Figure 4 will help us in trying to determine what the proper ratio between energy and protein would be for specific instances.

Most feed manufacturers know how many pounds of feed are required per dozen eggs for each of their various layer formulas under good management conditions with birds that are bred to lay well. They also know the cost of their various formulas. This chart can be of some help in predicting what changes in efficiency or cost are necessary to make one more economical for the poultryman than the other one.

Figure 4 shows graphically how ration cost and efficiency affect either feed cost per dozen eggs or total cost per dozen eggs. Ten cents per dozen has been allowed for costs other than feed. This 10¢ figure includes 6¢ per dozen for depreciation in value of the laying hen and 4¢ per dozen for costs other than labor. It provides for depreciation of equipment and housing and for electricity, insurance, etc.

Suppose a low energy feed costs $3 cwt., and records show that 6 lb. of feed are required to produce a dozen eggs over an extended period. Move up the line that shows 6 lb. of feed per dozen eggs to the point where it crosses the $3 per 100 lb. of feed. Then draw a horizontal line across the chart. This will come out at 27½¢ total cost per dozen.

The table shows that one can afford to pay $3.50 for a feed that will require only 5.1 lb. of feed per dozen eggs. To carry this further, the figure shows that one could pay $4 cwt. for a feed that required about 4.5 lb. of feed per dozen eggs.

Conclusion

The prediction can be made that in the future the protein levels for layers will be reduced. This may have to wait until we know more about the amino acid requirements of the hen so that we can feed hens only corn, minerals, vitamins and either very small amounts of certain amino acids such as arginine, isoleucine, lysine, methionine, phenylalanine, threonine, of tryptophan, or small amounts of protein feedstuffs such as fish meal, meat scrap, soybean oil meal or even blood meal.

The prices of the amino acids in the future will determine their use.

CONDEMNATION COST HEAVY FOR DELMARVA

NEWARK, DEL.—At the present rate of condemnation of chickens by processing plants, the cost to the Delmarva Peninsula poultry industry could reach $1,115,000 annually, W. T. McAllister, marketing specialist with the University of Delaware, said recently.

He said that 1% of the chickens produced on the peninsula are being rejected by plant inspectors.

"The causes for 89% of the condemnations have been disease and problems associated with flock management, as shown by a survey of 12 processing plants on the peninsula," Mr. McAllister said.

"The other 11% resulted from faulty processing and bruises from mishandling," Mr. McAllister added.

The presence of a support price on corn will, of course, affect this considerably. As long as soybean oil meal can be bought nearly as cheaply as corn, formulators of laying feeds will continue to use liberal amounts of soybean oil meal.

Swisher Appoints Mills

DANVILLE, ILL. — The Swisher Feed division of Wm. Davies Co., Inc., Danville, recently announced the appointment of three independent milling companies to the firm's feed service organization.

The new mills are: Freyberger Bros. Farm Supply, Dubois, Ind.; Parr (Ind.) Elevator, and Cook's Quality Hatchery, Frankfort, Ind.

These mills work under a territorial franchise arrangement and manufacture Swisher feeds locally, using "super concentrates," locally obtained grain and soybean oil meal.

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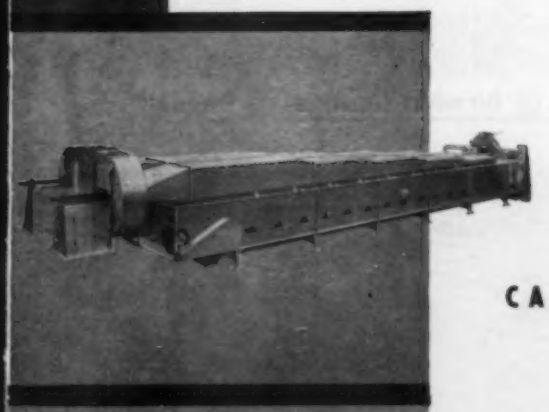

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Tests of Feed Rations and Feeding Systems Reported at Illinois Sheep Day

URBANA, ILL.—Results of an experiment designed to study the differences between a self-fed complete mixed ration and a hand-fed ration of shelled corn and alfalfa hay were reported recently at the Illinois Sheep Day held by the University of Illinois.

The experiment was also used to test the effect of pelleting a complete mixed ration and the effect of a low level of antibiotics in the feed.

Other tests reported at the sheep day included metabolism studies with lambs on high-moisture corn and metabolism studies of ground, de-hydrated corncobs compared with soybean hulls as roughage for fattening lambs.

A review of some of the material presented concerning these tests follows:

EFFECTS OF DIFFERENT RATIONS AND FEEDING SYSTEMS ON PERFORMANCE OF FATTENING LAMBS: R. K. Mohrman, Ralston Purina Co.; Dr. E. E. Hatfield; Dr. H. W. Norton; B. B. Doane, and Dr. U. S. Garrigus—This experiment evaluated the use of higher oil, higher protein corn; the effect of pelleting a complete mixed ration; the effect of a low level of antibiotics in the feed, and the effect of a 3 mg. implant of stilbestrol on lamb performance.

The six rations used in the test included hand-fed shelled corn and alfalfa hay, a complete ration, complete ration plus antibiotics, complete ration plus high-oil corn, complete ration with high-oil corn plus antibiotics and a pelleted complete ration with high-oil corn plus antibiotics.

The hand-fed lambs were started on .3 lb. of shelled corn per head daily, which was gradually increased to 1.5 lb. per head daily. About 2 lb. of alfalfa hay was fed per head daily. The rations with antibiotics contained aureomycin and terramycin.

Results of the test indicated an advantage—increased rate of gain and feed efficiency—of self-feeding a complete mixed ration over hand-feeding a shelled corn and alfalfa hay ration. It also indicated a complete ration allows the lambs to reach market weight faster on less feed. The test showed that as length of feeding period increases, daily gain and feed efficiency usually decrease. This was true in both methods of feeding.

Regarding the performance of the implanted and non-implanted lambs, an advantage was seen in the increase of .16 lb. (36%) in daily gains and the decrease of 2.4 lb. (27%) in feed per pound of gain when stilbestrol was used. At the end of the 60-day feeding period, the implanted lambs averaged 11 lb. heavier than those not implanted.

The use of antibiotics gave no statistically significant advantage. However, when antibiotics were included, the daily gain was .57 lb. compared with .50 lb. without antibiotics; and 7.4 lb. of feed were required per pound of gain with antibiotics compared with 7.7 lb. for no antibiotics.

No difference was found in lamb performance due to pelleting.

Conclusions

The results of the experiment indicate that, when a complete mixed ration was fed, most of the lambs were ready for market in 40-45 days. A relatively short feeding period provides maximum gains with a minimum amount of feed per unit of gain.

Whether or not to feed a complete mixed ration depends on such factors as size of flock, cost of mixing, available labor and available feeds. The individual flock owner will have to decide whether there is a place in his program for feeding a complete mixed ration.

The advantages of antibiotics are more pronounced when feedlot conditions are poor and the lambs are not in top physical condition.

The researchers believe the reason pelleting caused no significant difference in gains and feed efficiency was that, the better the ration is nutritionally, the less effective pelleting is in improving performance.

In this experiment, the researchers believe the possible reason that no significant advantages were found for the higher oil, higher protein corn was the high protein content of the basal ration. A summary of results of all feeding trials at the Illinois station since 1953 shows an average increase of 7% in rate of gain and a 6% reduction in feed per unit of gain when higher oil, higher protein corn was used.

The researchers pointed out that while the results obtained in this experiment were quite favorable, they do not represent the maximum fattening-lamb performance that is possible. Individual lambs in this experiment gained a pound a day for 28 days. Some lambs gained 48 lb. in 52 days. These individual performances give hope of further great advances in breeding and feeding in the next 10-20 years.

METABOLISM STUDIES WITH LAMBS ON HIGH-MOISTURE CORN, ENSILED AND LATER DRIED, AND ON FIELD-DRIED CORN: R. K. Mohrman, Dr. E. E. Hatfield, Dr. U. S. Garrigus, Dr. R. M. Forbes and J. H. Ramser—An experiment designed to determine whether any changes occur in the nutritive value of ensiled high-mois-

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ture corn after drying was described by these researchers. The digestibility of dry matter, energy and nitrogen was determined in rations containing either 50% ensiled dried high-moisture corn or 50% field-dried corn. Nitrogen (protein) retention was also measured.

The researchers said the two types of corn showed no difference in digestibility of nitrogen, and digestibility of dry matter and energy was only slightly greater for the ensiled dried corn than for the field-dried corn. The field-dried corn, however, showed a significant increase in grams of nitrogen retained.

Summary

There are two possible explanations for the slightly higher average digestibility of the ensiled dried corn, according to the researchers:

1. The ensiled corn was picked at 30% moisture, and the kernel was not so hard at that stage of maturity as at a drier stage. Perhaps, also, the tie-up of nutrients was not complete, the researchers said. Either of these factors could mean easier and more complete digestion.

2. The action of fermentation and other processes that occur in the silo may tend to soften the kernel or change it chemically so that it is more digestible.

The researchers cited the following possible causes for the lowered retention of nitrogen in the ensiled dried corn:

- When corn is picked early, perhaps all of the amino acids that are normally found in corn have not formed.
- During ensiling, the fermentation, enzyme action and heating that occur both in the silo and during drying may cause a change in the amino acids that lowers their biological value.
- Rumen action may also have some effect. The nitrogen or amino acid tie-up in the ensiled dried corn may not be so stable and action by the rumen flora may cause more ammonia to form that may not be utilized efficiently.

METABOLISM STUDIES OF GROUND, DEHYDRATED CORNCOBS COMPARED WITH SOYBEAN HULLS AS ROUGHAGE FOR FATTENING LAMBS: R. K. Mohrman, Dr. E. E. Hatfield and Dr. U. S. Garrigus—Many soybean processing plants are producing soybean meal that now contains 50% protein instead of 43% as previously produced. The result is that many of the hulls that formerly were returned to the meal are now being left as a by-product.

The hulls contain about 12% protein and 37% total digestible nutrients. They would not have to be ground to mix well in a complete self-fed ruminant ration, according to the researchers.

This experiment was designed to evaluate the use of soybean hulls compared with dehydrated ground corncobs as a roughage for fattening lambs. The comparison included relative digestibility of dry matter, nitrogen and energy rations containing 32% of one or the other of the roughages. The nitrogen (protein) retained by the lambs was also measured.

Digestibility of all nutrients was significantly higher for the soybean hulls than for the dehydrated corncobs, according to the researchers. Total intake of dry matter and energy was about the same for both rations, while nitrogen intake was 80 grams higher per lamb for the hulls than for the cobs during the total six-day period. The reason was the higher protein level of the soybean hulls, according to the researchers. The nitrogen balance was significantly higher because of the increased total intake and higher digestibility.

Summary

The higher digestion coefficient of the soybean hulls indicated that they were much more digestible than the cobs in a low nitrogen ration. The percent of dry matter and calories of energy were about the same in the two rations, but the percent of nitrogen was almost twice as great in the ration with hulls. The apparent digestibility of nitrogen was greater in the ration with hulls than in the ration with cobs.

The increased nitrogen retention in the ration with hulls was probably due to the higher nitrogen intake in that ration.

Results of these trials with lambs indicate that soybean hulls are consumed readily and are quite digestible. The next step will be to conduct a fattening lamb trial to determine relative average daily gain and feed efficiency on soybean hulls compared with other roughages, said the researchers.

PROGRESS IN SHEEP PRODUCTION: Dr. R. M. Jordan, University of Minnesota—Dr. Jordan said that in order to create a progressive and financially sound sheep business on a farm, the following changes appear likely and logical:

- The production of lambs will be in the hands of fewer producers and the size of the average "farm flock" will increase, perhaps double or triple.
- The method of producing sheep will change from an extensive system (pastoral method) to an intensive system (less use will be made of pasture and far greater use of grain and dry-lot feeding).

Dr. Jordan said these changes are possible and practical only if the method of early weaning of lambs is followed. He said this means that the lambs would be creep-fed a palatable and nutritious feed and marketed at four to five months of age as choice 90 lb. lambs rather than at seven to eight months of age and of questionable quality.

"Some rather bold approaches will be necessary if sheep production in the U.S. is to remain competitive with other meat products and imported lamb and mutton," he said.

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California Cost Per 100 Pounds of Pork $18.79, Says Survey

LOS ANGELES, CAL.—It costs approximately $18.79 to produce 100 lb. of pork live weight in California's central valleys. This figure was arrived at from a survey just completed by Phillip S. Parsons, farm management specialist of the agricultural extension service at Davis. Mr. Parsons outlined survey results to hog producers attending the California Farm Bureau's annual swine section dinner in Los Angeles recently.

Mr. Parsons said the survey was launched in July covering the five counties of Shasta, Tehama, Glenn, Butte and Colusa with hog ranches ranging from a very few to as many as 300 sows. The most typical operation, he said, is around 25 sows per ranch and is handled in conjunction with other farm projects.

"The chief purpose of this study," Mr. Parsons said, "was to determine the approximate cost of producing 100 lb. of pork, live weight. Income was not considered. The inputs and costs are an average of the information presented by the growers. The data is based on the calendar year 1958 and is given for a 25-sow operation."

There were 1.9 litters per sow during the year, Mr. Parsons said, with 8.6 pigs per litter, and mortality to weaning ran 16%. Pigs weaned per sow numbered 13.7 and, with approximately 1% mortality from this stage to marketing at 200 lb., each sow raised 13.56 pigs. Not counting those kept for replacement, sales numbered 331 fat hogs totaling 66,200 lb. Cull sows and boars brought the total number of animals sold to 339 weighing 69,500 lb.

Around 70% of total costs were for feed, the survey showed, with feed for the 25-sow enterprise amounting to $9,255. This breaks down to $370.20 for each sow or $13.31 cwt. of hog produced.

Other costs chargeable to the enterprise made the cost $15.39 cwt. of pork. The average investment, according to the survey, was $6,000 for land, buildings and equipment. Labor was charged at $1.50 per hour, and labor requirements averaged out at 45 hours per sow per year. On this basis, the total for labor was $1,687.50. Other costs including depreciation, taxes, etc., were used in compiling the final figure of $18.79 cwt.

Mr. Parsons said cost figures would vary for large operators who could make some savings in feed and other purchases.

Ful-O-Pep's Top Salesmen Honored

CHICAGO—Six Ful-O-Pep representatives were presented with five shares of company stock in recognition of being named "District Representatives of the Year." I. S. Riggs, vice president in charge of feed sales for the Quaker Oats Co., presented the stock.

Bill Lewis, Russellville, Ark.; John Nauholz, Algona, Iowa; Guy Brackett, Salem, Ind.; Louis Diehl, Chattanooga, Tenn.; William Bradbury, Cuero, Texas, and Richard Psolla, Camp Hill, Pa., were honored. The six award winners also enjoyed a three-day, expense-paid holiday in Chicago with their wives. Virgil Myers, Marion, Iowa, also was named a winner, but was unable to make the trip.

While in Chicago, the representatives participated in a round-table discussion with officers of the company and management personnel of the Ful-O-Pep division.

The top seven were selected on the basis of their attitude and citizenship, as well as their sales and tonnage record.

Food Industry Urged To Tell Story to Youth

WASHINGTON—All members of the food industry are being urged to tell their stories to America's 18 million teenagers by tying their advertising and merchandising plans into the "Youthpower" campaign developed by the National Food Conference.

Some of the members of the conference are Allied Mills, Inc., American Feed Manufacturers Assn., Inc., General Mills, Inc., National Live Stock & Meat Board and Poultry & Egg National Board.

In an open letter to the food industry introducing the special advertising kit being sent to members of the industry, Charles B. Shuman, NFC general chairman, called the Youthpower effort "a partnership of those of us who produce, process and merchandise the nation's food supply."

Mr. Shuman said that local and state "Food Comes First—for Youthpower" activities and the National Youthpower Congress to be held in Chicago Feb. 11-13 will stimulate teenage and adult interest in nutrition and good eating habits." But he warned that the success of this united food industry program "rests in large measure on the interest and ingenuity you show in telling your story . . . within the framework of our central theme, 'Food Comes First—for Youthpower'."

The advertising kit, featuring the slogan and a specially designed emblem, suggests a variety of ways in which the food industry can tell its story in newspaper, magazine and radio-TV advertising and in public relations projects.

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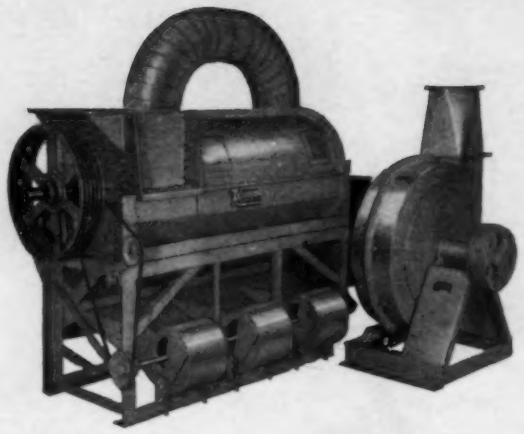

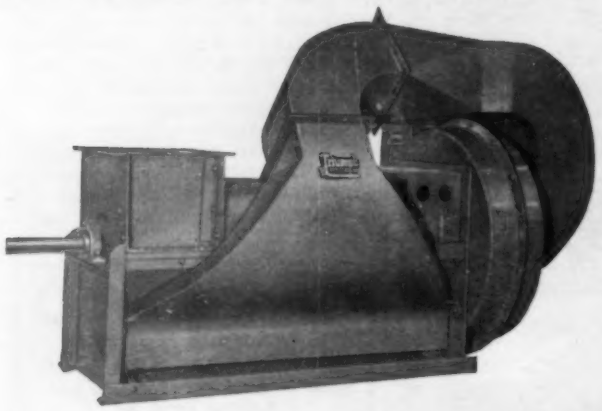

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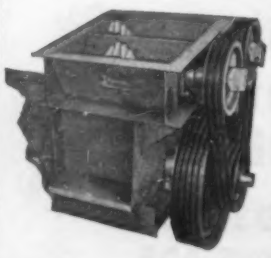

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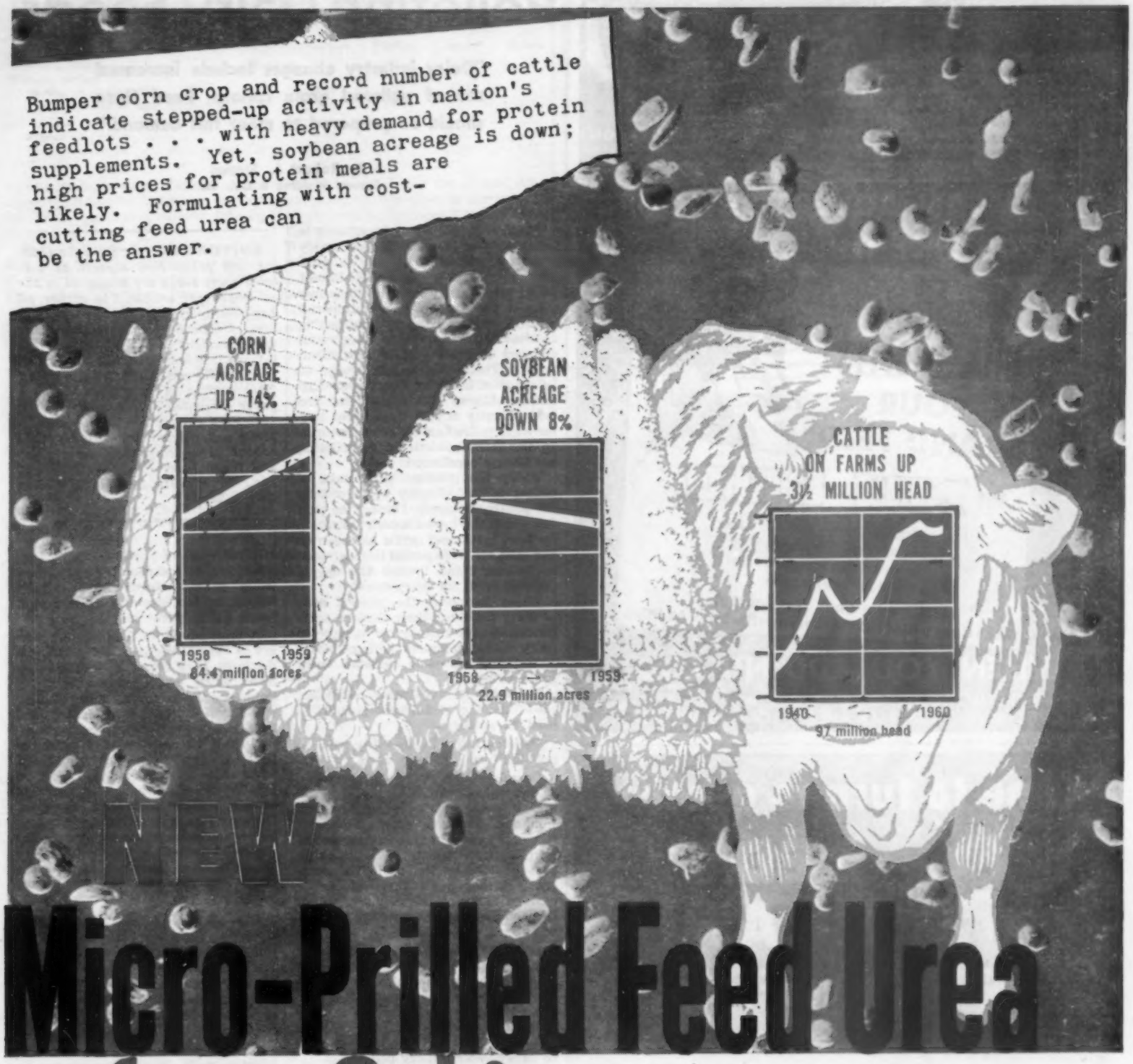

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Pelleting Dairy Feeds

"Dairy industry changes include increased use of pelleted grain rations. Feed firms should be prepared to meet this demand."

By Robert L. Stroup
Sprout, Waldron & Co., Inc.

EDITOR'S NOTE: Both the feeding and production aspects of pelleted dairy feeds are discussed in the accompanying article. The author, an engineering graduate of Pennsylvania State University, is assistant to the vice president of Sprout, Waldron & Co., Inc., Muncy, Pa., specializing in pellet mills and auxiliary equipment. This article is condensed from a paper presented by Mr. Stroup at the 1959 Feed Production School. A complete copyrighted transcript of the school proceedings is available for $15 from Feed Production School, Inc., 20 W. 9th St. Bldg., Kansas City 5, Mo.

The feeding of pellets to animals is generally considered to be a relatively recent innovation. However, a publication in 1860 by the U.S. Patent Office reveals that the veterinary surgeon of the French Army's Imperial Guard had succeeded in compressing crushed oats and corn along with chopped hay and straw into small tablets. These first pellets proved to be a way of better feeding for cavalry horses. Almost 100 years later the feed industry is still looking for better ways to feed animals and, naturally, the many advantages of pelleting are always considered.

Today the greatest percentage of pellets is undoubtedly consumed by the poultry industry. During the past few years the use of a pelleted ration for beef cattle and lambs has been on the increase. This period has also seen a growing trend toward the use of pelleted feeds for dairy cows.

When discussing the general area of dairy pelleting, there is often some confusion over such terms as pelleted dairy feeds, complete pelleted dairy ration and complete pelleted dairy grain ration.

In order to avoid this confusion, the following definitions should be used as guides.

Pelleted Dairy Feeds—Any feeds in pelleted form for dairy cows.

Complete Pelleted Dairy Ration—The complete ration of a dairy cow including the grain concentrate portion and roughage such as hay or silage, premixed and then compressed into pellets (this term is probably somewhat better known in the western U.S. than in the midwestern and eastern parts of the country, where the complete pelleted ration has not been used as extensively).

Complete Pelleted Dairy Grain Ration—That portion of the ration which includes the grain and various concentrates in pelleted form. These pellets do not contain any roughage. Sometimes, especially in the Northwest and Northeast, this is referred to as a complete dairy pellet.

It is the purpose of this paper to discuss mainly the pelleted dairy grain rations. In examining dairy pelleting and its place in the feed industry, two areas should be considered: (1) Pelleted rations and their value to the dairymen. (2) The manufacture of dairy pellets.

PELLETED RATIONS AND THEIR VALUE TO THE DAIRYMAN—There are two main feeding practices where pellets are generally used:

(1) A complete pelleted ration including roughage is fed without regard to milk production. Sometimes a small amount of loose roughage is fed along with the pellets.

(2) The pelleted grain ration is fed in amounts which are varied according to milk production, butterfat content and the type of roughage available. In this practice, the grain ration is usually fed during milking and roughage is either fed free-choice in the yard or the cows are fed on pasture when it is available.

Feeding of the grain ration in varied proportions according to milk production, butterfat content and roughage quality seems to be the general form of feeding used by the more progressive dairy farms which follow the recommendations of the feed manufacturer.

With the trend to bigger and better herds, the dairyman has to be constantly searching for new and more efficient ways of producing milk. Pelleting and the inherent advantages of using pelleted feeds have greatly helped to increase the efficiency of many dairy operations.

A brief survey of feed manufacturers in various sections of the country discloses that their sales of all pelleted dairy grain rations have increased quite markedly since the introduction of this item. Most of the people checked had only been manufacturing complete pellets during the past two or three years, or had just begun to market them in 1958-59. In most cases the production was only several hundred tons at the outset of this program, but within a year or so these figures increased to over several thousand tons. It is logical to believe that the use of dairy pellets will continue to increase during the next few years.

ADVANTAGES OF PELLETED FEEDS—What can pelleted feeds do for the dairyman? Here are just a few of the advantages:

(1) Pelleting reduces dust, making the work area more comfortable and minimizing the loss of fine powdered ingredients.

(2) Pelleting reduces bulk, cutting storage space requirements to an absolute minimum.

(3) Pelleting homogenizes the feed and eliminates selective feeding, thus guaranteeing the required formula balance.

(4) Pelleting prevents waste of costly additives.

(5) Pelleting simplifies handling, permitting increased efficiency from the use of bulk handling equipment.

(6) Pellets are cleaner to feed. Many dairymen find they can avoid the chore of washing the manger daily when they are feeding pellets.

(7) Pellets can be eaten faster by dairy cows. A fast rate of consumption is especially important where milk parlors are used and minimum milking time is the goal.

(8) Pelleting provides a feed with a consistent bulk density.

EATING TIME IS CRITICAL—An increased rate of grain ration consumption is of great value to the dairyman who uses a milk parlor. In this type of operation, it is highly desirable to have the dairy cows consume all of their grain ration during the time they are being milked.

Recent work by Stallcup, Bostain and Bierworth, University of Arkansas, reported on the factors influencing the time required for dairy cows to eat concentrates and silage. This work is of particular interest to this discussion in that it reported on the consumption rate of concentrate con-

TABLE 1. Time Dairy Cows Require to Eat Concentrates Consumed by Dairy Cows on Pasture and Under Winter Feeding Conditions

Measure	Brown Swiss	Guernsey	Holstein-Friesian	Jersey	All breeds
Number of cows	6	4	11	11	32
While on pasture					
Pounds concentrate fed	3.19	3.50	4.90	4.55	...
Conc. consumption rate (minutes/lb.)	2.16	2.58	2.47	2.32	2.38
Fed hay and silage					
Pounds concentrate fed	3.33	4.75	6.73	5.73	...
Conc. consumption rate (minutes/lb.)	1.39	1.68	1.08	1.43	1.33

sumed by dairy cows. Table 1 shows these consumption rates for various breeds of cows and various feeding conditions.

In order to compare these consumption rates for grain concentrate ration in mash form, an industrial engineer from Sprout-Waldron made a time study of a dairy herd which had been fed 10/64 in. dairy grain pellets for more than a year. The herd observed was a 33-head herd in northern Vermont with an average milk production of 13,788 lb. per cow, with a butterfat content of 3.7. All of the cows were of the Holstein breed. The particular dairyman here used a three-stall "U" type milk parlor in his operation. He found, as many dairymen do, that the time it took the cows to consume mash was too long and this caused a longer milking time which of course was very undesirable. He switched his herd from mash feeding to all pellet feeding over a year ago in order to save time in his operation. He found still another advantage from pellet feeding in that he eliminated bridging problems in his holding bins over the milk parlor. He also found that the feeding area remained considerably cleaner when using pellets.

In this study a total of 47 feeding rates were recorded. The average feeding time was found to be 1.02 minutes per pound or a consumption rate of 0.985 lb. per min.*

The 1.02 min. required to eat a pound of feed should be compared with the table of the work done at Arkansas where the consumption rate for mash on Holstein dairy cows while on pasture was 2.47 min. per lb. It should also be mentioned that this time study which was made during July was at a time when the cows were on good pasture.

CONCENTRATE CONSUMPTION—Further work on grain concentrate consumption was reported by Blosser and Shaw of the State College of Washington. Here a 12/64 in. pellet was used in the feeding tests. Over a two-week period, the rate of ground concentrate consumption was quite stable, but the rate of pellet consumption increased until the last three or four days of the two-week period, at which time the rate of consumption leveled off. Using the rate of pelleted grain consumption during the last three or four days of the second week as typical of the rate at which a Guernsey cow in an elevated walk-through milk parlor can eat pellets, a 29% increase appears to be a fairly realistic estimate of increased consumption in an 8 min. period.

Fig. 1 shows the average rate of concentrate consumption by the 18 cows checked both on a pelleted and on a regular ground concentrate. It should be noted that the rate of consumption by the cows at the end of a two-week period begins to approach the rate of consumption in the Sprout-Waldron test. These cows had been on pelleted concentrates for over a year.

When the dairyman uses a volume metering type feeder in his feeding operation, the use of a pelleted dairy grain ration has a very decided advantage, not only from the standpoint of cleanliness but also from the standpoint of a consistent bulk density. Large variations of bulk density will of course affect actual weight of the ration being fed. There is often great variation in the bulk density of certain ingredients found in dairy formulas. For instance, tests have shown that bran will often vary between 120 and 260 quarts per 100 lb. This is a 200% variation; oftentimes a dairy ration will contain as high as 20% bran. If this were the case, the effective variation in the bulk density of a formula due to different lots of bran could be as high as 40% (200% x 20%).

For example, let us consider that such a variation in ingredients could cause a percentage error of only plus 10% on a volume basis. Let us further assume that a particular cow would receive 10 lb. of grain ration each day. Then 1 lb. of concentrate which will not produce appreciable income will be fed. If this is done 305 days per year with a herd of 60 cows, the total weight of concentrate fed over and above requirements would be 18,300 lb. or approximately nine tons. At $75 per ton, this represents a loss of $675 per year.

If a similar 10% error of 1 lb. were made by feeding too little and assuming an average production of 2 lb. of milk per lb. of concentrate, each cow would give 2 lb. less milk per day. If this were done for 305 days with 60 cows, the loss in milk production in a year would be 366 cwt. At $5 per cwt. this would represent $1,830, less $675 for the concentrate which was not fed, or a net loss in income of $1,155.

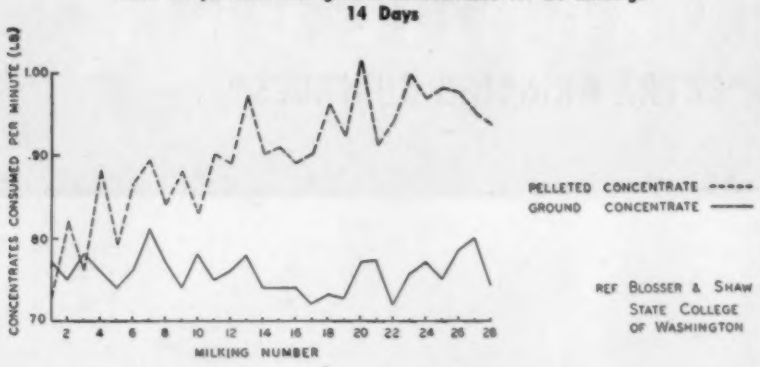
If pellets were used, this loss would be eliminated because of the constant bulk density of the pelleted product.

Some ingredients, such as linseed meal, soybean meal, hominy, gluten and middlings, often comprise 50% of a dairy ration. Although linseed meal is often supplied in a crumbled form and soybean meal is flaked, the remainder of these ingredients will often go through a 40-mesh screen. This fineness of grind tends to have undesirable effects on the feed. Two of these are: (1) Because of difference in particle size of these ingredients when compared to the remainder of the ration, the finer ingredients will sometimes tend to separate from the other particles; thus the result is a very inconsistent mix. (2) These in-

(Turn to page 42)

*Statistical analysis showed that the 95% confidence limit of the means of the population was 0.985 lb./min. ± 0.0515 lb./min.

FIGURE 1. Average rate of concentrate consumption by 18 cows on pelleted and ground concentrates for 28 milkings. 14 Days



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Our reason is purely selfish for Stonemo helps us reduce broiler production costs many ways. We have accumulated ample evidence over the years that Stonemo does help our birds grind out more weight per pound of feed used, and good feed conversion is what we're looking for.

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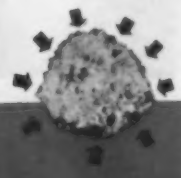

Grower Stonemo Granite Grit Magnified 6 Times

STONE MOUNTAIN GRIT COMPANY, INC., LITHONIA, GEORGIA

gredients, when in a very fine state, tend to stick in the manger, thus causing problems of cleanliness. The pelleted ration, on the other hand, provides for a homogenized feed in one compact little package.

Dairy feeds in pelleted form will, we are convinced, take hold in a big way over the years ahead. The growing preference for pelleted dairy feed on the part of the user is not a little influenced by the handling at his end, and elimination of the many problems that occur with the loose feeds.

MANUFACTURE OF DAIRY PELLETS—Pelleting a complete dairy grain concentrate ration does not differ too much from pelleting other feeds such as poultry rations, with the exception of some changes in the very basic ingredients. Thus, when considering the manufacture of dairy pellets, one should take into account the various factors of production which are inherent to any efficient pelleting operation, in addition to those factors which are peculiar to the pelleting of dairy rations.

Many feed manufacturers are still hesitant about accepting the values of pelleting their dairy rations. When you look beneath the surface, you almost always find that the feed manufacturer who fears the trend is worried about the need for adding substantially to his plant facilities. If only a small fraction of all dairy feeds produced in this country were put into pellet form, there would not be enough pellet mills in existence to take care of the need.

Thus, we should consider ways of increasing production with existing facilities along with some general pointers on expanding with a minimum of additional equipment.

WAYS OF INCREASING PRODUCTION—The way to increase production with existing facilities is simply to follow those basic precepts inherent with an efficient pelleting operation: proper conditioning, recommended fineness of grind, good steam supply, proper die selection, proper die speed, proper roll and cut-off knife adjustment, and preventive maintenance.

If the pellet mill operator will pay attention to these basic factors and make sure that he applies the recommendations of the manufacturer with respect to these factors, the pellet mill equipment should perform at peak production. There are no gimmicks, no gadgets for the pellet mill which are going to produce astonishing results. Good pelleting efficiency is always based on sound engineering judgment with a bit of common sense.

FINENESS OF GRIND—A very important influence on the quality and toughness of a dairy pellet is the fineness of grind. Material that is finely ground has considerably more surface area exposed to absorb whatever binding quality may be available in the formula. We have found through a series of tests that the most practical fineness of grind is when the mash will all pass through at least a 7 mesh screen. Often times people will recomend that the material be ground on a certain size hammermill screen. However, this sort of recommendation should be tempered with some experience and test work, because as we all know, each material reacts differently under the impact of the hammermill.

Some ingredients such as brewers' grains are often a significant percentage of a dairy formula. These products are frequently supplied in a very coarse form. At one installation there was a problem with pellet breakage. An examination of the formulation showed that the fiber length in some of the brewers' grains being used was as long as ½ in. Very definitely coarse particles like these will tend to weaken pellets and cause a problem with fines. The solution was, of course, a finer grind.

In one group of tests conducted on the manufacture of dairy pellets, a pellet of ¼ in. diameter was made. It was found that the best results were obtained when the grind was made through a ¼ in. screen in a 3,600 RPM hammermill. Results on this test indicated that the ¼ in. grind was best for this particular process, and further investigation indicated that it did not seem practical to grind any finer than through a ¼ in. screen. This conclusion was arrived at due to the fact that the production rate obtainable from the hammermill would have been decreased considerably if any finer than ¼ in. screen was used, and at this particular operation the advantage of a finer grind was overweighed by this decreased production in grinding facilities.

MOISTURE—A natural or bound moisture content of ingredients is another important factor in pelletability. Moisture affects the pelletability by decreasing the rate of production possibly more than it affects hardness of the pellet. One source of moisture in dairy pellets is, of course, the molasses, which often accounts for 5% to 10% of the ration.

During the tests mentioned above, it was found that the dairy formula which had 10% molasses was pelleted best when the molasses was added at the conditioner. The addition of molasses in the premix and allowing the total mix to stand for a period of 8 hours did not seem to significantly change the quality of the pellets. In fact, there was some indication that the pellet was somewhat better when molasses was introduced at the conditioner. Thus it would seem that premixing, at least in the formula being run, did not significantly improve production. It should be remembered that this observation is based on a particular test made on a specific formula.

This does not necessarily apply when coarse fiber is present. Moisture from the molasses penetrates fibrous material through the ends. Any ap-

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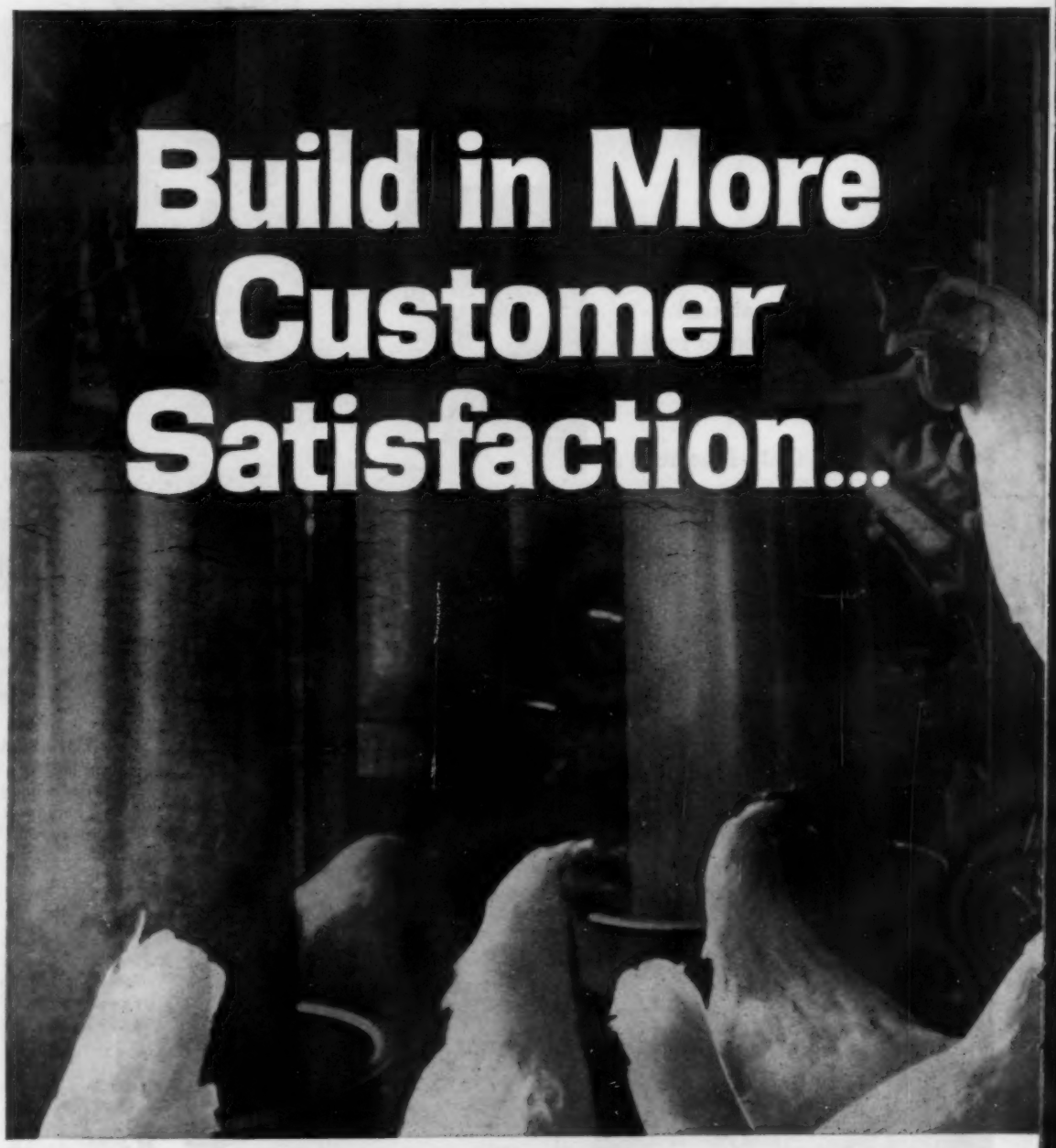

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preciable fiber length requires penetration time; otherwise, the fiber will swell after the pellet is formed and a split pellet is the consequence. Thus, the best pelletability will often require that the mixture be allowed to temper for about 4 hours to permit moisture penetration. Tempering, however, varies, and the required time for a specific formula should be determined by experimentation.

BINDING QUALITIES—Many feed ingredients have excellent binding qualities and characteristics, and these qualities are highly desirable in a formula that is to be pelleted. These qualities permit a physio-chemical binding that is different from a straight pressure or forced type of binding. One source of binding material is the natural starches contained in a feed formula. The conversion of raw starch to a gelatinized state through the addition of moisture and heat in the form of steam helps make an extremely hard and well bound pellet. In fact, it is the opinion of many researchers that all the carbohydrates found in the total digestible nutrients of feed products contribute to binding qualities.

CONDITIONING—Proper conditioning is one of the more important factors in realizing high capacity in pelleting dairy feeds. Higher temperatures obtained through proper conditioning are also very important in obtaining optimum capacity. The temperature range of the conditioned mash for most formulas will generally give best results somewhere between 160° and 180° F. and, in some cases, at higher temperatures. Special attention should be given to the observation of the temperature gauge when starting up production of dairy pellets.

With the average mash it is necessary to raise the moisture content to somewhere between 13% and 17%. This is usually done through the introduction of live steam. With most mashes, proper conditioning is indicated when a pinch of the hot mash squeezed between the thumb and forefinger will form a slick wafer of a slightly doughy nature. However, this type of test should be supplemented as mentioned before with very close attention to the temperature of the mash entering the mill.

Indications of insufficient conditioning in the mill are higher power input with more horsepower per pound consumed, low production rates, shiny pellets, and irregular lengths. Pellets not well conditioned appear to be quite hard as they come from the die, but they are actually fragile and soft in the center, resulting from a hard case burned around the mash. Running at low temperatures and moisture also results in excessive wear on the die and rolls.

DIE SELECTION—The proper selection of a die is undoubtedly one of the most important factors in the efficient production of pellets. There are three variables in the design of a die for any particular size hole. They are: (1) Number of holes in the die. (2) Entry taper of the hole. (Usually important in holes ¼ in. and larger.) (3) Thickness of the die.

The use of a wide die which permits a larger number of holes than a narrow die helps increase production. The term "wide die" is defined as a die having a width of 6 in., as compared to a narrow die having a width of 5 in. Conditioning is not as critical on a wide die. This is so because the more a mash is conditioned the greater is its moisture content; the greater its moisture content the more difficult it is to compress a given thickness between the roll and die. The use of wide die gives an increased die surface and spreads the given mat of mash into a thinner layer. This permits greater conditioning than would otherwise be possible.

Where greater compression is required, entry tapers for die holes are specified. The greater the entry taper the fewer the holes, and conversely the die that has no entry taper can have the maximum number of holes as these holes are straight and have a continuous bore. In the manufacture of dairy pellets most applications will not call for any special entry because of the small diameter holes. A straight continuous bore is usually quite adequate. The thickness of the die directly affects the amount of horsepower consumed; the thicker the die the more horsepower consumed per pound. Conversely, the thinner the die the less horsepower per pound. However, the die thickness is an important factor in producing a satisfactory, hard and tough pellet. Changes in formulation will greatly influence the most efficient die thickness. For example, we have found that as the molasses percentage goes up usually a thinner die is required. Below is a table showing the range of thicknesses used most often for a particular size hole in dairy pelleting operations.

Diameter	Thickness Range
10/64 In.	1⅜ In.—2 In.
3/16 In.	1½ In.—2 In.
13/64 In.	1¾ In.—2¼ In.
¼ In.	2 In.—2½ In.

A typical problem is one where the mill was making very satisfactory pellets on a 10/64 in. x 1¾ in. die. The problem arose when the production of a ¼ in. pellet was desired for the same formula. The key to the solution is to consider the ratio of the thickness to the hole diameter. The ratio for the 10/64 in. x 1¾ in. die is 11.2 to 1 (1.75/0.156). Carrying this ratio over to the ¼ in. die we can see that for the same formula we should use a die that has a thickness of 2.33 in. (11.2 x 0.25); hence, a die having a

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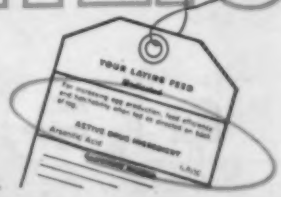

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thickness of the nearest standard, 2¼ in. thick, should be used.

It was found at many pelleting installations, where they were making a 10/64 in. poultry ration along with a dairy ration, that die corrosion was a major problem in high production efficiency. At one installation a special alloy die specifically developed for control of the corrosion problem was installed. The die used before this special alloy die was placed on the mill had produced approximately 1,900 tons. The first die put in at this installation lasted for 8,512 tons. This was a fourfold increase. A second special alloy die gave 7,950 tons. We have recently checked over 45 special alloy dies located in mills where corrosion is a problem. In all cases the reports indicate that special alloy dies have at least doubled in life and corrosion is no longer a problem.

DIE SPEED—Some pellet mills are operated at an insufficient die speed. Consequently the operator cannot condition up to the optimum temperature and moisture level, and still use full motor load. Hence, he will reduce the feed rate in order to use full motor amperage. This means that the pellets will be soft, rate low, and wear on the rolls and die will be excessive.

The die should be driven at a high enough speed so that the mash can be conditioned to the optimum level with the motor pulling full load. Increase in die speed decreases the thickness of the mash layer under the roll and permits optimum conditioning.

ROLLS—Proper roll adjustment and roll condition are very important parts of an efficient operation. Clearance between the face of the rolls and inner surface of the die is such that the rolls should just barely miss the die high spots. The rolls should be adjusted so they do not run in metallic contact with the face of the die. In service the die and rolls will wear, and relation of one to the other should be checked periodically. A good guide to the need for readjustment of rolls is a drop-off in pellet production capacity. Many pellet mills use corrguated rollers made of through-hardened tool steel or hard-faced with a special overlay material.

CUT-OFF—The common designs of pellet mills have stationary cut-off knives mounted so the knife adjustment controls the length of the pellet. Usually there are two cut-off knives with a standard two-roll pellet mill. Pellets will approximate in length the distance the knife is set from the outside surface of the die. It is important that the knives be set to cut at about the same rate, for if one knife is cutting more than the other, the relatively idle knife will be making an excess of fines.

CAPACITIES—Dairy rations generally tend to pellet with slightly less capacity than poultry rations. Capacities, of course, will vary with the particular formulation being processed. Field reports have shown that the capacities of dairy pelleting usually range between 150 and 200 lb. per h.p. hour. This would mean that on a 100 h.p. mill, the capacity would be between 15,000 and 20,000 lb. per hour.

EXPANDING—After the existing pelleting facilities have been analyzed and all of the basic rules of pelleting have been followed to improve production, the next logical step, of course, is to consider various adaptations and additions of equipment.

MORE HORSEPOWER—One very obvious way to increase production is, of course, to equip the mill with more horsepower. Most pellet mills which are built for 50 h.p. or over can be equipped with motors up to 125 h.p. Also, most pellet mills having a 20 h.p. or larger motor can be equipped for higher horsepower up to 50 h.p.

The rate of production for pellet mills is almost proportional to the horsepower applied on any given formula. More horsepower means more pounds per hour. It should be noted, though, that this refers to applied horsepower and not just horsepower available. Often times an operator will run the pellet mill at an amperage input of considerably less than the full load rating of the motor.

The following table is a list of horsepower inputs and corresponding die speeds for drives between 40 and 125 h.p., which are recommended for most feed formulations.

H.P.	Die diameter	Approximate die speed (R.P.M.)
125	16½ in.	480
100	16½ in.	390
75	16½ in.	290
60	16½ in.	230
50	16½ in.	230
40	12 in.	315
50	12 in.	390

Horsepower increase generally should be accompanied by an increase in die speed. For more horsepower input the change is relatively simple in that most times the drive sheave on the motor can be replaced by a larger sheave to decrease the ratio of the drive to the driven; hence, giving more die speed.

Since the power requirement for a no-load condition is constant, increase in horsepower will increase production. This increase in production will be proportional to horsepower increase. For example, if a 75 h.p. mill is producing 16,000 lb. per hour, then a 100 h.p. drive on the same mill should give about 21,000 lb. per hour (100/75 x 16,000).

OTHER CONSIDERATIONS—If an increase in production is going to be accomplished by an increase in horsepower of the pellet mill, then other auxiliary equipment will probably have to be changed to receive this additional capacity.

Vertical coolers of some designs can be increased in capacity by simply adding additional sections to the cooler. Along with this change it is pos-

(Turn to PELLETING, page 72)

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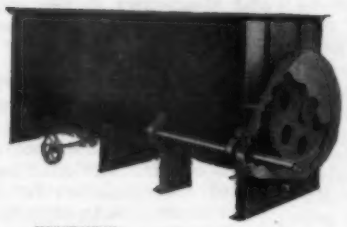

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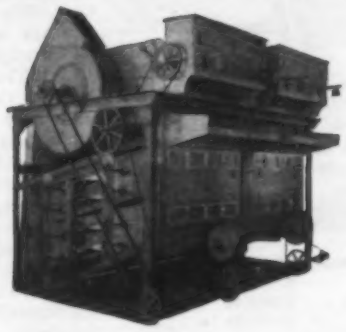

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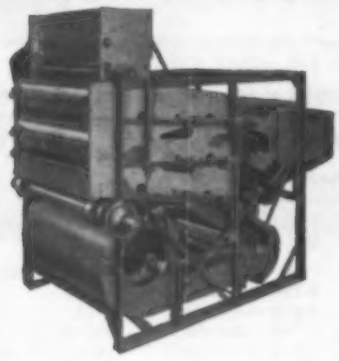

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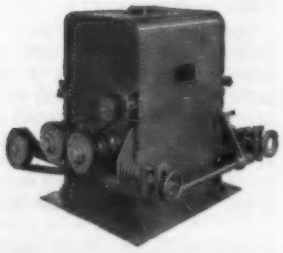

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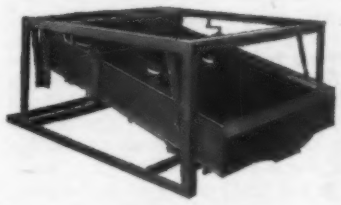

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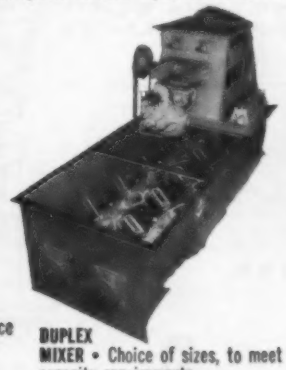
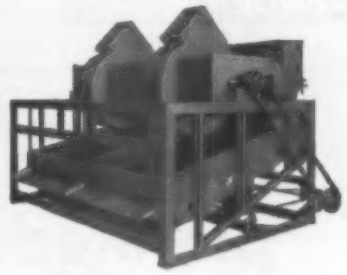
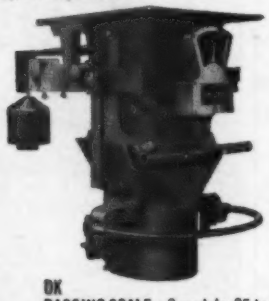


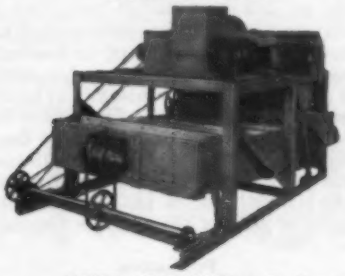
DUPLEX MIXER • Choice of sizes, to meet your capacity requirements.



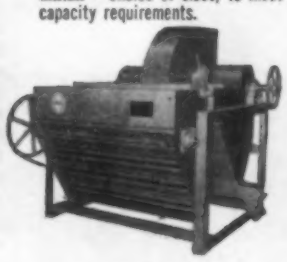
RECEIVING SCALPER • 11 sizes, 1 & 2 screen models. Wide range of capacities.



OK BAGGING SCALE • 2 models, 25 to 200 lbs.



SNAPPY AIR FINISHER • 7 sizes— Capacities to 20 tons/hr.



ASPIRATOR • 12" to 48" width cones for various capacities.

ALL STEEL REEL • Variety of models to individual requirements.

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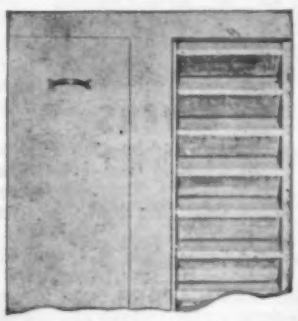
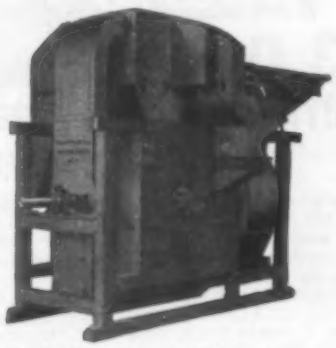
Surveys show your investment in Eureka equipment reduces production and operating costs... improves your competitive position.

Howes produces a complete line of units to equip your entire operation. Each unit is expertly designed and precisely built to deliver efficient, durable service alone or in combination with other Eureka units.

Your requirements are most closely matched from the wide selection of items for each process. A wider range of standard models. Special units custom built to exact specifications. All are competitively priced. Experienced assistance is available. Also, free bulletins and catalogs. Your request for information or quotes will receive prompt, personal attention.



NEEDLE SCREEN SEPARATOR • Sectional View — 4 sizes each double or single Stream to 500 bu/hr. capacity.



OAT CLIPPER • 7 models in 9 sizes for all capacities.

CONVEYING EQUIPMENT • Bucket elevators, screw, belt and board conveyors
LABORATORY EQUIPMENT • A complete line of test equipment

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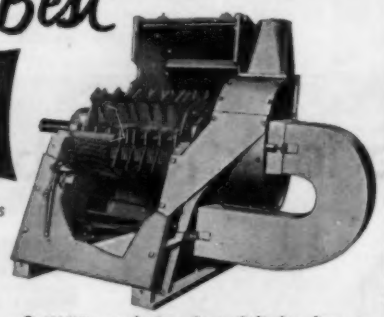
Silver Creek, N. Y.
MANUFACTURING ENGINEERS

NO OTHER EQUIPMENT DOES SO MUCH... SO LONG... FOR SO LITTLE

Why W-W is the Best

HAMMERMILL BUY

ORIGINATORS OF HARD SURFACE HAMMERS



1. No pre-crushing of ear corn is required.
2. W-W has many quality features as well as a grey cast iron frame that resists corrosion and won't rust; gives exceptionally long life. Hammers are hard-surfaced with Tungsten Carbide.
3. W-W's exclusive Star Cylinder has a unique design that requires much less power than competitive makes.
4. W-W has been producing quality mills for over 50 years. Original mills are still in use.
5. Prices are lower than most makes with inferior quality. Here are representative prices:*

Model	HP	Feed Opening	Price *
F-25M Gooseneck	40	18"	$ 697.04
F-27M Gooseneck	75	24"	$1665.86
F-29M Gooseneck	100-150	36"	$2183.98

Other Models from $154.00 to $408.16. * All prices f.o.b. factory. You get the best hammermill available. Write for catalog and ask about convenient time-payment plan.

W-W GRINDER CORP.

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WICHITA 4, KANSAS

master planned...

..Farm Proved

43,000

SOUTHERN EMPIRE TRUE-LINES LAYERS

"interior egg quality excellent"

The geneticist above points to one phase of the TRUE-LINES "master plan of poultry breeding". Blood-typing and other advanced techniques are used to design TRUE-LINES profit traits. CONSISTENTLY GOOD EGG QUALITY is one trait resulting directly from this scientifically blue-printed program. SOUTHERN EMPIRE FARMS, with more than 43,000 TRUE-LINES writes: "We like the size and shape of TRUE-LINES eggs. Interior quality is excellent. THEY ARE A PROFITABLE LAYER. Feed conversion very good."

For Colonial TRUE-LINES, we trapnest 365 days a year instead of the customary 300 days. The result: greater *inherent* stamina . . . STAYING POWER . . . 10% to 24% more eggs last 75 days of laying year . . . in Random Sample Tests.

Write for address of TRUE-LINES ASSOCIATE HATCHERY nearest you... and savings up to $150 per 1,000 pullets.

COLONIAL POULTRY FARMS, INC.
General Offices, Pleasant Hill, Missouri

specification designed for the egg industry

COLONIAL TRUE-LINES®

★ Buy and Sell Through WANT ADS ★

Pennsylvania Firm's Steady Calls Keep Feed Volume Up

By Phil Lance
Feedstuffs Special Writer

The secret behind the continually increasing feed volume enjoyed by the Elverson (Pa.) Supply Co. is quite simple.

"We just keep in consistent contact with our customers and just as frequently visit our prospects," points out Thomas McCord, general manager and vice president. "This keeps us selling regularly to established customers and gets us new business sooner or later. By holding our own and continually adding new customers, we are enjoying continual sales volume increases."

Many customers are contacted weekly and others every other week. However, no customer is visited less frequently than this. Does this program of personal contact pay off? Well, let's ask Mr. McCord and see what he has to say about it.

"First, it helps us to keep out competition because customers know that they can depend upon us regularly to give them whatever service they require," points out Mr. McCord. "Secondly, if a customer has any problem, we are right there to correct it, and this helps to build up a closer relationship between us. Finally, because of our constant visits to our customers, we can practically order their feed requirements ourselves and in this way keep feed deliveries continually going to our customers.

"It has often been said that visiting a customer too frequently will annoy him. However, we haven't found this to be true. In fact, our customers wait for us, and if we do not appear on a certain date and at a certain hour as usual, they will phone us to find out why. The farmer likes to chat with a dealer who has his interests at heart and will gladly meet him when he knows that he is due. Not only does this work to our satisfaction with our customers, but, just as frequently, paying visits to our prospects usually gets us some of their business sooner or later."

Promotion

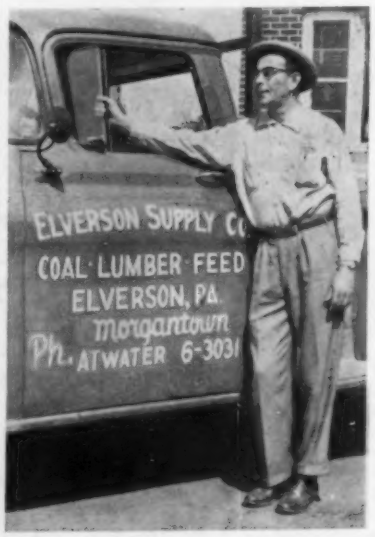
In between visits, Elverson Supply is continually sending out direct mail pieces to its customers and prospects. This material advertises Big "H" Feeds or Honegger prefab buildings and poultry equipment. In addition to about a half-dozen self-mailing pieces sent directly from Honeggers' & Co., at Fairbury, Ill., stuffers are frequently used in mailing out statements as a means of continually keeping this feed dealer and his brand of feeds before the farmers in his area.

Twice a year the Elverson Supply Co. throws a "get together dinner" for all their customers and prospects in the area. Transportation is furnished to and from the banquet hall which plays a very important part in making these gatherings the huge success they are. Transportation is furnished by the Elverson Supply Co. because the vast population of Amish and Mennonites in the area do not use automobiles, resorting still to the horse and buggy.

Turnout Almost 100%

"When we recently promoted a combination open house and chick day to highlight our entrance into bulk feed," says Mr. McCord, "we also furnished transportation for the plain folks in our area to come to our celebration. We told the farmers at just what point and at what hour buses and automobiles would be through their territory, and that they and their entire family could be picked up. With the exception of just a few individuals, our turnout was almost 100% as expected."

Mr. McCord moved into the bulk feed picture last May. He said bulk savings were essential if he was to maintain the contact that he had with his customers and to attract new business to his mill. The severe drop in egg prices, the drastic cut in poultry prices and other factors were forcing many farmers up against the wall as



READY TO CALL—Tom McCord of Elverson (Pa.) Supply Co. believes in making continued visits to his customers and prospects in order to hold his normal sales and attract new business.

SMALL-ORDER DELIVERY—Some of the customers using improvised bulk storage require small-order delivery, which is handled in bags. The bags are emptied and the feed blown by a pneumatic blower into storage bins. Small bulk customers can become big users, says Tom McCord, general manager and vice president of the Elverson (Pa.) Supply Co.

far as making profits from poultry raising or egg production were concerned.

A Sprout-Waldron pneumatic blower was attached to one of the six-ton delivery trucks, and this is used currently as the means of delivering bulk feed. Piping feed into the farmer's bins has reduced delivery time by approximately 40% and has eliminated an extra hand who used to accompany the driver on his delivery route. The savings that bulk feed delivery affords this dealer are passed on to the customer, Mr. McCord said. This is in addition to the savings which the customer obtains through quantity discounts earned by purchasing a sufficient amount of feed for bulk delivery. In some instances, said the manager, these savings have helped to turn losses into profits for customers.

Installs Conveyors

For greater mill efficiency, Mr. McCord has installed several hundred feet of conveyors which help to move along bagged feed, oyster shell, grit, etc., to each point of operation more quickly. He also has installed a conveyor so that bulk feed in freight cars can be unloaded in about half the time that it formerly required. Greater mill efficiency and productivity has been still another helpful factor in keeping this dealer's profit level in line with his goal, while providing greater benefits in the way of savings to the mill's customers.

"One mill employee can now handle as much volume as three men did previously," points out Mr. McCord. "This has enabled us to reduce our prices to a minimum so that our customers enjoy greater savings. As a result, we have found ourselves extremely competitive, and I don't think we have lost a dollar's worth of business to any other source because of price. Our customers are so pleased with our prices, in fact, that they discuss it with others, and I like to think this has been responsible for attracting new feed business for us."

At present, Mr. McCord explains that practically 50% of his feed deliveries are in bulk. He feels that within the next year it will approach 100%. As an assistance to farmers who cannot finance the installation of their own bulk bins, Elverson Supply Co. will finance it for them, charging them $1 per ton of feed until the bin has been paid for.

The average bin installed by Mr. McCord's customers has a capacity of 5 tons. Mr. McCord always suggests that the customer erect a bin that has a larger capacity than his current need so that it can hold greater capacity when it is required in the future. The size bin erected, naturally, is in line with the rising needs of the farmer, and, with the steady contact that this dealer has with his customers, proper suggestions can be made.

"Our close association with our customers helps us even to prepare them ahead of time when they are first getting in their chicks for the season," explains Mr. McCord. "We assist them in setting up the poultry houses and have the necessary equipment to handle the new flock that they intend to raise. The necessary feed naturally follows along afterward so that sales always follow service in our contact with the farmer. As a result, it isn't necessary for us to pressure for business—it comes to us naturally. This is one of the most important factors that has made our feed sales a pleasant and profitable program for us."

NEW QUARTERS

CLEVELAND — Dow Chemical Co.'s Cleveland sales office has occupied new quarters on the 18th floor of the recently completed Illuminating Building, 55 Public Square.

YOUR PROTEIN HEADQUARTERS:

FISH MEALS
★ 70% Herring Meal
★ 60% White Fish Meal
★ 60% East Coast Fish Meal

"PRIDE" ANIMAL PROTEINS
★ 50% Meat & Bone Meal
★ 60% Digester Tankage
★ Non-Extracted Liver Meal, Imported

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MILLING COMPANY MINNEAPOLIS, MINN.

MR. AMSCO SAYS:

"For year around availability of premium quality meat & bone, fish meal and A and D oils, you can depend on Amsco."

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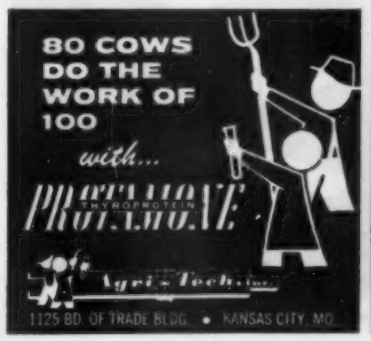

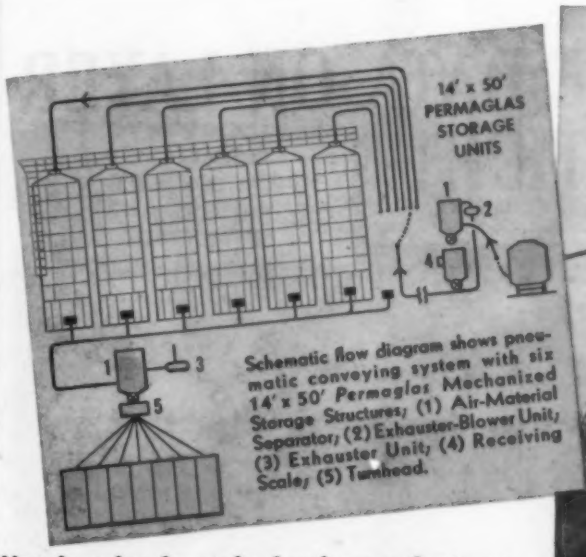
14' x 50' PERMAGLAS STORAGE UNITS
1
2
4
1
3
5
Schematic flow diagram shows pneumatic conveying system with six 14' x 50' Permaglas Mechanized Storage Structures; (1) Air-Material Separator; (2) Exhauster-Blower Unit; (3) Exhauster Unit; (4) Receiving Scale; (5) Turnhead.

Here's why formula food manufacturer converted to automatic, bulk storage...

Permaglas®

Storage Units boost mill capacity 100%

without adding to mixing facilities... one man does work of six in same time... bulk savings climb to $3.00 per ton

F. M. Brown's Sons, Inc., of Birdsboro, Pa., reports substantial savings from their automatic handling and bulk storage system for soybean meal, gluten feed, distillers and brewers grains, bran and middlings with six 14' x 50' *Permaglas* Mechanized Storage Units equipped with A. O. Smith's exclusive mechanical "sweep-arm" bottom unloaders. This leading formula food manufacturer's pneumatic system has been in operation for more than two years.

BULK HANDLING SAVINGS—With *Permaglas* bulk storage the mill more than doubled its 40-ton per day production capacity without installation of additional mixing facilities... one man unloads a car in about the same time which formerly required 4-6 men approximately three hours... the extra manpower is now available for other duties... purchase of bulk feeds results in net savings up to $3.00 per ton. In addition, *Permaglas* units eliminated discharge problems inherent with conventional silos in handling bran, middlings and soft feed ingredients. And bulk handling efficiency eliminated smaller mixing operations at three other mills which are now used for distribution of finished products.

PUSH BUTTON CONVEYING SYSTEM — Bulk feed ingredients are discharged automatically from cars to each of six *Permaglas* Storage Units into the pneumatic system by means of mechanical "sweep-arm" bottom unloaders to one of eleven holding bins, and spouted by gravity to a scale into the mixers.

The *Permaglas* Storage Units are glass-fused-to-steel construction* both inside and out... provide utmost sanitation, and easy-to-clean bulk handling systems... safeguard free-flowing bulk materials from contamination... reduce periodic structure maintenance to a minimum.

Why not profit from the many cost-savings advantages of automatic handling systems with *Permaglas* Bulk Storage Structures. Ask A. O. Smith to help solve your materials handling problems. Mail coupon today!

*HYDRASTEEL—Protected by U.S. Patent No. 2,754,222.

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Feed Company Finds Market in Iowa Game Bird Hunting Preserve Business

NEW SHARON, IOWA — Raising game birds for sport shooting is "no job for a lazy man," but shows promise of economic success, says Ed Lloyd, whose game preserve at New Sharon is going into the third season. His project also represents a new feed market for Hubbard Milling Co., Mankato, Minn.

Mr. Lloyd recently outlined the bright and not-so-bright aspects of the business to Dale Snyder, sales manager for Hubbard's plant at Cedar Rapids, Iowa.

"We went into the game bird shooting as a new cash crop to replace the raising of pure-bred Tamworth hogs when there didn't seem to be any money in hogs," he said, "and for the first two years of hard work and anxious wondering, game birds as a business appeared very discouraging. But this year things are looking up—reservations indicate we may have from 800 to 1,000 hunters before the season ends April 1, and that will probably mean that we are right on the edge of what we hope will be payoff years ahead." Mr. Lloyd averaged about 300 hunters per season the first two years at the 1,200 acre preserve.

Initial stock included 100 Bob White quail and 60 chukar partridge in pairs, purchased from a Missouri game farm, for egg-laying. Also purchased were 4,200 pheasant eggs from an Iowa game breeder.

The quail and chukar have been raised on wire, and the pheasants are raised in open pens with nearly 6 ft. wire tops, permitting them to learn to fly naturally, so they become fair game in the field.

Hunters registering at Lloyd's Bird Layne Farms pay at the rate of $20 minimum for one hunter in a party. For this amount the hunter is guaranteed five pheasant, six chukars or eight quail. The rest of the party may shoot as many or as few birds as they like at $4 per pheasant, $3.50 per chukar, or $2.50 per quail. Dogs and guides are provided free.

GAME BIRD FARM—Feeding thousands of pheasants is part of the job of Ed Lloyd who, with his wife, operates a game bird hunting preserve near New Sharon, Iowa. Mr. Lloyd (left) is shown conferring with Dale Snyder, sales manager of the Hubbard Milling Co. plant at Cedar Rapids, Iowa. Mr. Lloyd uses Hubbard Sunshine Feed. Some 800-1,000 hunters are expected to converge on the farm before shooting stops April 1.

Mr. Lloyd feeds the breeders a special feed, using Hubbard's Sunshine Feed.

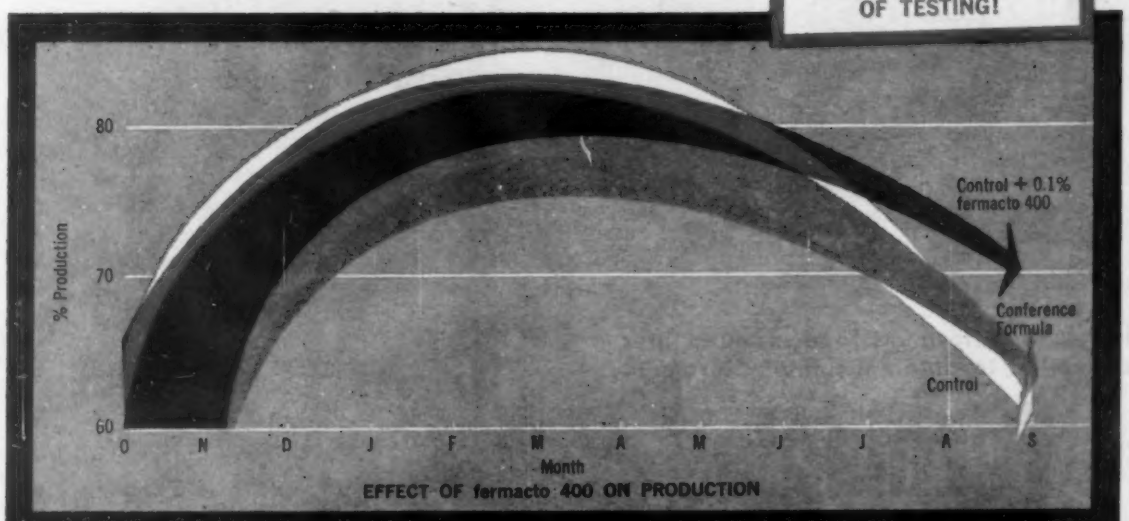
Mr. Lloyd listed some of his problems as follows: ". . . hens don't have any sense and lay their eggs any place in the pens. The cocks are not satisfied with five or six hens each, but want to possess all the females. They fight, pick and generally try to tear one another apart. The hens get temperamental and don't lay. When they do lay, the cocks eat the eggs. If the pens are not constantly watched, horned owls make the pen a private dining room, and raccoons, foxes and stray dogs want their share.

"When the eggs are taken to the incubation room, they have to be stored at the right temperature and turned regularly. It takes days for them to hatch and anything can happen. If there is an electrical storm, the power goes off and the eggs get cold and won't hatch. If the thermostat goes on the blink, the eggs are burned out. The humidity changes every hour and the operator has to keep checking the egg cells. For some unexplainable reason, only 75% of the eggs are fertile. And then only 70% of them hatch."

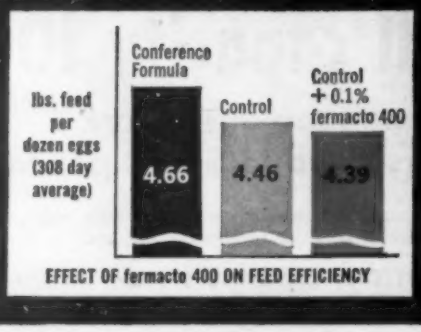
Mr. Lloyd listed many more problems in keeping hunter-customers happy, but as one of nine licensed game preserve operators in Iowa, he feels that the future of his business will be a good one.

NEW CONCLUSIVE DATA ON LAYER MASH FORTIFICATION!

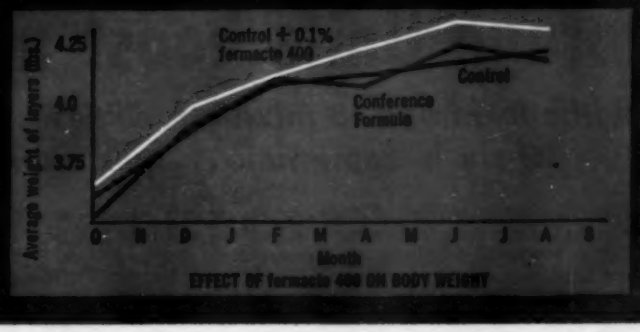
RESULTS FROM BORDEN'S SECOND FULL CYCLE OF TESTING!



EFFECT OF fermacto 400 ON PRODUCTION



EFFECT OF fermacto 400 ON FEED EFFICIENCY



EFFECT OF fermacto 400 ON BODY WEIGHT

fermacto 400 increases production and betters feed efficiency while still maintaining favorable body weight. Costs only 25¢ per ton of mash! Let *Borden's* simplified formula build you a cheaper ton of feed!

Another example of how Borden's nutrition research helps make better feeds.

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Laboratories and Test Farms at Elgin, Illinois

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BLOMFIELD-SWANSON
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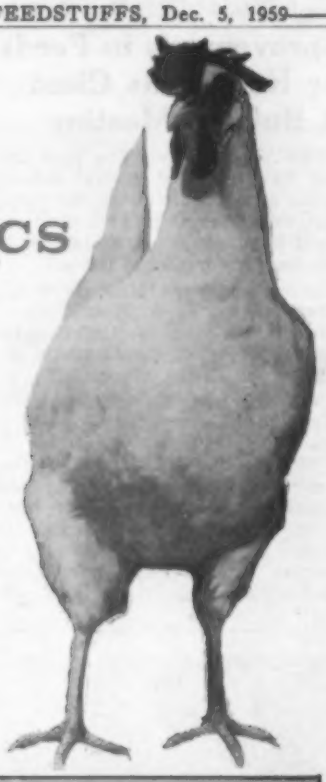
PROOF that Hy-Line® PRECISION GENETICS creates a harder-working layer



RANKING OF HY-LINE AND NEXT FOUR LARGEST-SELLING LAYERS IN ALL OFFICIAL RANDOM SAMPLE LAYING TESTS ENDING IN 1959

ALL U. S. TESTS Listed in order of completion	Total entries in test	RANK FOR INCOME OVER FEED AND CHICK COSTS				
		HY-LINE 934 series	BRAND B layers	BRAND C layers	BRAND D layers	BRAND E layers
*UTAH	18	†3rd, 4th	6th	12th	10th	NO ENTRY
TEXAS	30	1st, 2nd, 3rd	9th, 13th	4th, 6th, 12th	22nd, 23rd, 24th	11th, 16th
WISCONSIN	26	2nd, 4th	11th	10th	19th, 24th	13th
MISSOURI	52	†3rd	12th	1st	32nd, 50th	13th, 38th
FLORIDA	23	†1st	3rd, 8th, 18th	2nd, 10th	16th, 20th, 22nd	9th, 13th, 15th
NEW JERSEY	25	NO ENTRY	18th	11th	NO ENTRY	6th
ARIZONA	6	1st	2nd	5th	4th	NO ENTRY
PENNSYLVANIA	48	2nd	16th	34th	38th	23rd
NEW YORK (Central)	33	1st	2nd	5th	27th	4th
NEW YORK (Western)	34	NO ENTRY	NO ENTRY	NO ENTRY	NO ENTRY	27th
MINNESOTA	16	1st	NO ENTRY	2nd	5th	3rd
CALIFORNIA (Floor)	50	13th	14th, 20th	20th	9th	19th
TESTS BELOW DID NOT REPORT INCOME AND FEED COSTS						
**IOWA	16	1st	4th	2nd	5th	9th
#CALIFORNIA (Cages)	50	5th	19th, 29th	10th	19th	40th

*Utah reports income over feed cost only. Rankings for all entries corrected by deducting chick costs.
†Hy-Line 968 (a discontinued commercial variety) ranked 1st in Utah, 10th in Missouri and 11th in Florida.
**Rankings based on "eggs per hen housed." Hy-Line entry also ranked first in laying house livability and egg size.
Rankings based on "eggs per hen housed."
There is also a test in Tennessee which started in 1958 and will not end until 1960.

First in 6 of 12 tests entered!

This year's official Random Sample Test results again prove the superiority of Hy-Line 934 Series white-egg layers. They competed in 12 of the 14 tests ending in 1959. They won first in 6 of the 12 tests, as many as all others combined. *No other layer won more than one test.*

Twelve of the 16 Hy-Line 934 Series entries in these tests finished 1st, 2nd or 3rd. The greatest record by far ever made by any layer in the history of the Random Sample Laying Tests.

No wonder Hy-Line white-egg layers — the same kind that won all the "firsts" — are the world's most popular. Write for full information on Hy-Line 934 Series white-egg layers.

Random Sample Tests are conducted by state colleges, poultry improvement groups, state Departments of Agriculture, etc.

HY-LINE: OUTSTANDING IN ALL FOUR IMPORTANT INCOME FACTORS

1. High production
2. High livability
3. High feed efficiency
4. Large, good-quality eggs

Hy-Line® CHICKS

HY-LINE POULTRY FARMS
A department of Pioneer Hi-Bred Corn Co., Des Moines, Iowa
Hy-Line is a registered trademark of Pioneer Hi-Bred Corn Co. © 1959

Improvements in Feeds For Ruminants Cited At Buffalo Meeting

BUFFALO, N.Y. — "The past five years have revealed several defects in older concepts of rations and gains. What were considered excellent weight increases per pound of feed in 1953 are very mediocre today."

These statements highlighted the address of Dr. R. A. Rasmussen at a recent meeting of the Niagara Frontier section of the American Association of Cereal Chemists.

Beginning with a 1955 experiment which showed average daily gains of .5 lb. for a pelleted ration against .38 lb. for an unpelleted similar ration, he cited example after example from reports by well known nutritionists. "It is evident that changing the physical state of the ration has resulted in better gains and in increased benefits to the sheep and beef producer," said Dr. Rasmussen, vice president and director of research, animal division, Peter Hand Foundation.

He compared the gains shown in feeding baled, chopped and pelleted timothy-alfalfa hay in an experiment using 15 steers for each category. The 15 steers feeding on finely ground and pelleted hay gained 100 lb. on only 906 lb. of feed, while it took 1732 lb. of baled hay and 1723 lb. of chopped hay to show the same weight gain.

"Pelleting hay nearly doubled its value in pounds of beef per pound of hay and nearly tripled average daily gain of the steers," Dr. Rasmussen said. "It is evident that the chopping and pelleting of hay have not changed the nutrient content of the hay, but must have resulted in a change, most likely in the digestion of the hay.

"The Peter Hand Foundation has been aware of this for some time. Formulations that take advantage of the published findings are producing exceptional results," Dr. Rasmussen said.

"This past summer at our research farm, by furnishing 50 to 70 lb. lambs with adequate vitamin A, D and E, fermentation products, a small amount of highest quality fish products and trace minerals, gains were secured in excess of 1 lb. per head daily to market weight (100 lb.). The ration was hand fed as a complete mixture, but not pelleted.

"These discoveries are resulting in new concepts for ruminant feeding. Shorter and more profitable feeding schedules with roughage continuing to play a major role are sure to follow," Dr. Rasmussen stated.

Plant Expansion

FLEMINGTON, N.J.—Kuhl Poultry Equipment Co., and its associated firm, Kuhl Molding Corp., both of Flemington, have expanded their manufacturing plants an additional 17,000 square feet.

Mitchell Soro Joins Day Sales Co. Staff

CHICAGO, ILL.—Mitchell S. Soro has joined the Chicago office of the Day Sales Co., Minneapolis, as assistant district manager, announced Max R. Springer, company president.

M. S. Soro

Mr. Soro, a graduate of Illinois Institute of Technology, Chicago, has a bachelor of science degree in chemical engineering.

He will report to D. James Dowd, district manager in charge of the Chicago office. The office handles sales in northern Illinois, northern Indiana, southern Wisconsin and eastern Iowa.

Day Sales Co. distributes industrial bulk material handling and dust control equipment for the Day Co., Minneapolis.

U.S. Products Sought

WASHINGTON — Canada Linseed Oil Mills, Ltd., with plants in Montreal and Toronto, is seeking additional U.S. products for manufacture and sale in Canada under a licensing arrangement, according to Foreign Commerce Weekly.

A licensing arrangement or the outright purchase of an existing U.S. organization in Canada would be considered. Products compatible with the company's facilities would be preferred. However, sufficient capital is said to be available for production of products in other fields.

Interested firms are invited to address inquiries to M. J. McDonald, Canada Linseed Oil Mills, Ltd., 2215 Notre Dame St. E., Montreal, Quebec, Canada.

Money Needs the Right Mix, too

The amazing mobile feed mill pictured above mixes grains and health building additives on the site to the precise needs of livestock growers. C.I.T. Corporation arranges financing for sale of the equipment—a balanced mixture of money and terms suited to the exact needs of the Daffin Manufacturing Company's customers. Another example of how the right C.I.T. financing builds a manufacturer's sales potential.

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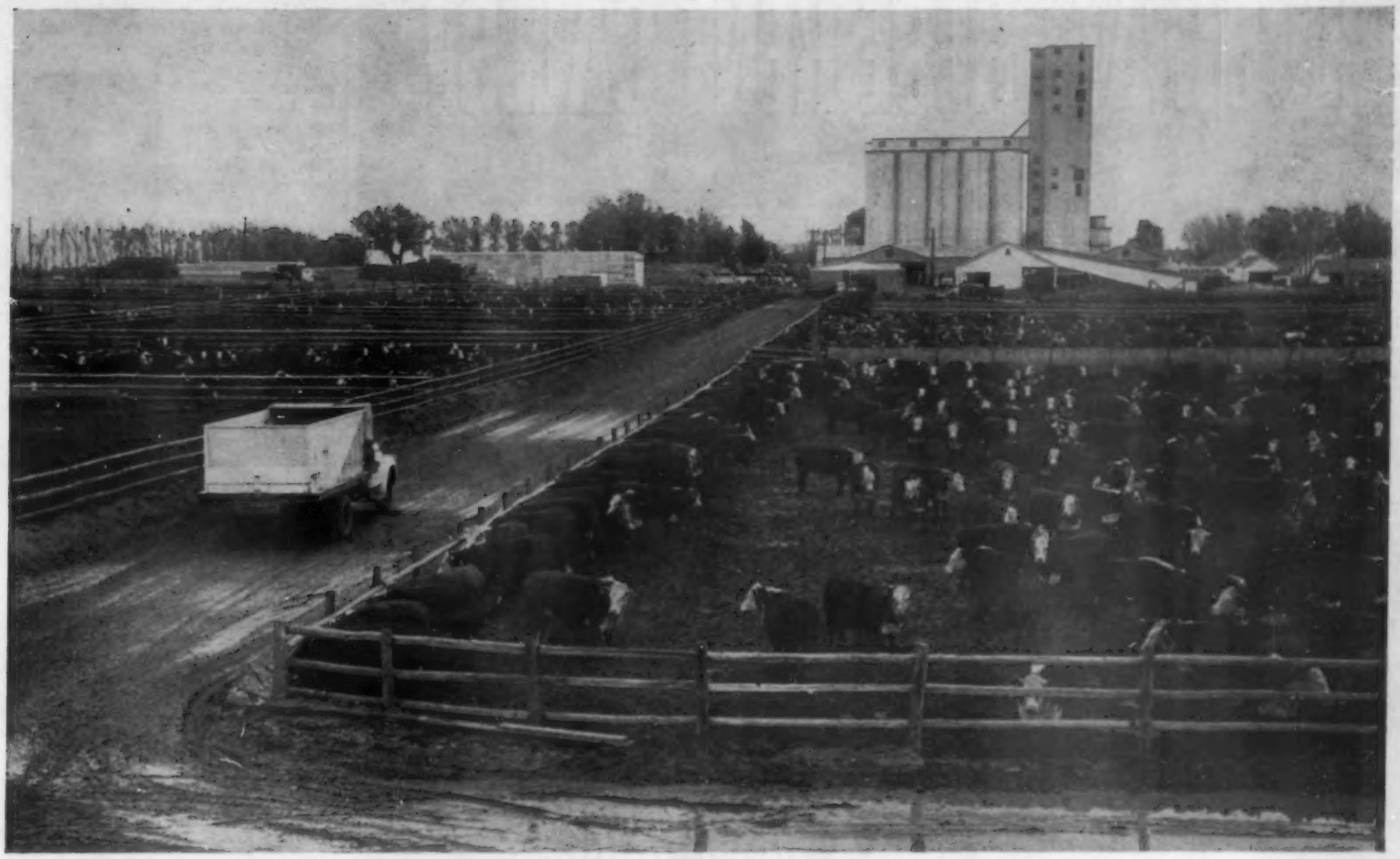
CIT CORPORATION

GIVE HIM A TIP HE'LL THANK YOU FOR

Remind him to order Morton T-M Salt. See page 79.

33,000-HEAD-CAPACITY MONFORT LOT FEEDS
STILBOSOL RATIONS FULL TIME TO BOTH STEERS AND HEIFERS



More than 200,000 Stilbosol-fed cattle have been marketed from these giant lots in Greeley, Colorado, since the Monforts first started feeding the new gain-booster in the fall of 1955. About 70% of the cattle are steers and 30% heifers. They are fed Stilbosol rations every day up to 48 hours before marketing.

Giant feedlot cuts costs 10% on steers, 5% on heifers with Stilbosol

"We feed a high-grade roughage-type ration and keep accurate feed intake and gain records on every pen," explains young Kenneth Monfort. "We've run numerous feed tests and have never had any negative results."

by Eugene S. Hahnel

With yearling steers fed 170 days, the Monforts count on at least 2½ lbs. daily gain from ranch to stockyards, including both shrinks. They feed yearling heifers about 130 days for a minimum 2.2 lbs. daily gain.

This photograph, taken from the top of the 500,000-bushel-capacity elevator, shows one of the two huge pit silos that provide a total capacity of 40,000 tons. "Stilbosol is simple to use in our highly mechanized feeding operations," says Kenneth Monfort. "We use Stilbosol for the same reason as everyone else ... more high-quality beef at less cost. You don't need other reasons."

Lilly **SALES TIPS FROM GRASS-ROOT SOURCES**

THE MONFORTS, GREELEY, COLORADO

Kenneth Monfort (left) and father, Warren, report excellent results after using Stilbosol on almost a quarter of a million cattle. They rely on supplements with Stilbosol to ...

1. **Cut feed costs 10% on steers, 5% on heifers.**
2. **Put on at least 2½ lbs. daily gain per steer, 2.2 lbs. daily gain per heifer.**
3. **Produce more high-quality beef at less cost.**

Stilbosol®
(diethylstilbestrol premix, Lilly)
Lilly

Stilbosol is Eli Lilly and Company's trademark for diethylstilbestrol premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U. S. Patent No. 2751303.

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LOOK AT THESE KENT SALES!

Kent's "Dealer-Help" program keeps sales climbing — keeps dealer profits mounting

Dealer identification — Kent increases identification of dealers with the feed by tieing them in with sales promotion events. Dealers shown here are appearing on a Kent television show.

Dealer education — Kent keeps its dealers up to date on the latest trends in feeding. Shown here are Kent dealers attending a recent bulk feed handling clinic.

Fairs and shows — Kent dealers have the Nation's Number One country band, Leo Greco and his Pioneers, available for dealer dances, goodwill events and sales promotion activities. This scene is from the Farm Progress Show.

As a Kent dealer you can take advantage of these, and many other sales-boosting ideas that bring customers in — that help sell for you. If you want to make more money from your feed business, write Kent Feeds today. Get the complete story on the fastest growing feed in the Middle West.

KENT FEEDS
"THE FEED WITHOUT A FILLER"
Muscatine, Iowa Sioux City, Iowa

Babcock Poultry Farm Appoints Geneticist

ITHACA, N.Y.—Dr. Jack Hill has joined Babcock Poultry Farm, Inc., as head geneticist in charge of the Babcock Breeding program, according to C. E. Dayton, general manager.

Dr. Jack Hill

In his post at the firm's breeding farms at Ithaca, N.Y., he will work with John Lyman and Monroe C. Babcock who have directed the research on the recently announced "New Babcock Bessie."

A native of Missouri, Dr. Hill received both his B.S. and M.S. degrees in poultry science at University of Missouri. He was awarded his doctorate from Iowa State University.

For the past nine years, he has been associated with Hy-Line Poultry Farms as geneticist in charge of field testing, including statistics, design and analysis of experiments.

Dr. Hill is a member of the Poultry Science Assn., World Poultry Science Assn., Gamma Sigma Delta, honorary agricultural fraternity, and Sigma Xi, honorary science fraternity.

Smoked Foods, Inc., Formed in Milwaukee

MILWAUKEE — Formation of Smoked Foods, Inc., a new company here, was announced recently by Charles L. Bowman, chairman of the board. The new firm will specialize in the production of hickory smoked food products for the food and pharmaceutical trade.

Other officers are Charles G. Marshall, president; John K. Pierce, vice president; Willis A. Diekema, secretary-treasurer, and Dr. Paul Pavcek, director of research. Mr. Bowman and Mr. Marshall are also officers of Bowman Feed Products and Chas. Bowman & Co.

Although many of its new products are not yet in production, Smoked Foods is at the present time offering a hickory smoked yeast powder which gives a concentrated bacony flavor to soups and meat products.

Advertisement

Average Salesmen Can Become Top Producers

ST. LOUIS, MO. — Many firms selling to the Poultry Industry have discovered a real sales stimulant in the Doane POULTRY REPORT. This factual, concise monthly outlook helps busy salesmen keep up-to-date on: (1) Price and production for eggs, for broilers, for turkeys; (2) Trends in feed, labor, equipment, supplies and costs; (3) Government laws and pending legislation that can affect the industry. Single subscription to Doane POULTRY REPORT is $10 a year; write for special bulk subscription rates. Your money back if you and your salesmen are not completely satisfied. Doane Agricultural Service, Inc., Dept. P-7, 5144 Delmar, St. Louis 8, Mo.

This man . . .

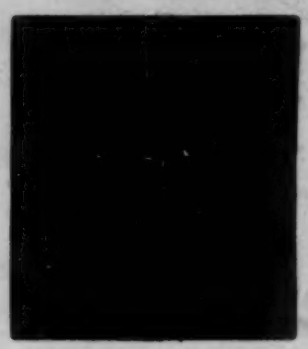
And this man . . .

have found the way to reduce disease risk in turkey feeding

They have seen how costly troubles can occur at any time. They have learned that diseases seldom attack singly . . . that a host of other troubles quickly attack birds weakened by disease or stress. Their successful solution to the problem of reducing disease risks through *protective feeding* follows.

"nf-180 pulled us through tight year"

Grower reported: "We couldn't have stood our usual mortality losses this year the way prices were. Using nf-180 kept disease down so we came through with very little trouble. Better feed conversion saved us money and our birds finished out well. Got a top price. Don't believe we could afford to raise turkeys without nf-180. especially in a tight year."



"Finished best flock in years"

This grower's last flock had made poor gains, suffered frequent off-feed periods and disease setbacks. His feed serviceman suggested nf-180 in the feed this year to prevent these troubles. Birds were started on 2 lb. level nf-180 feed and kept on it all through brooding period. Grower liked the size, vigor and livability of his flock so well he decided to continue 2 lb. level on to marketing. "Our death losses were the lowest and finish the best we'd had in years," he said.

"nf-180 gave us trouble-free season"

Turkey broiler grower had 8,000 on 2 lb. level of nf-180 from start to finish. Got to market without any disease troubles. Then put in another 8,000 for regular market. Kept these on 2 lb. level for 14 weeks and dropped to 1 lb. nf-180 per ton on to finishing. This flock just as trouble-free as first one.

"We don't start a

"It's taken care of most everything

Virgil Grigsby, Dover, Del., and his son raise some 30,000 turkeys a year. Five years ago paratyphoid swept through his flock until he was advised to check it with a 2-lb. level of nf-180. "And since then we haven't started a flock without using nf-180 protective feeding," he says. Here are his tape-recorded comments:

"Why did you try nf-180, Mr. Grigsby?"

"In 1954 we started with 14,800 Beltsville turkeys. Then paratyphoid hit and we lost down to 10,000 birds. I was told the only thing on the market that would do any good was a 2-lb. level of nf-180."

"How did it work?"

"We put our remaining 10,000 birds on nf-180 and at

"Best hatchability,

"This past year has been my best since I've been in the turkey business," says R. T. Maddox, Harrisonburg, Va. And he backs it up with profit figures. For example, on one breeder flock of 500 hens, the profit shared by Maddox and his grower totaled $6,756.35. Recently, Mr. Maddox took time off from his regular job at the Rockingham Milling Co., Harrisonburg, to tell his nf-180 protective feeding story. Here's how the conversation went:

"Mr. Maddox, tell us about your turkey breeder operation."

"I have four flocks of 500 breeder hens each. I also grew out about 67,500 birds this year. I hire people to keep them for me."

"Do you medicate the feed your breeder birds receive?"

"Yes, with a low level of nf-180. That's 1 lb. to the ton."

"And you think nf-180 is worthwhile?"

"Well, I've had much better hatchability since using

nf-180 protective

nf-180 (brand of furazolidone) on your feed tag is much, much more than a simple ingredient listing. It becomes an important customer-winning sales tool that goes on to build confidence and a good reputation for your feed . . . the sort of reputation that helps acquire new business.

If you're anxious to insure the turkey feed business you now have . . . and gain new customers, too . . . nf-180 is quite likely what you're looking for. The two reports above are typical of the enthusiasm turkey raisers all over the country have for nf-180 medicated

flock without nf-180"

that's happened to my turkeys."

once they stopped dying. They began to gain again so we kept them on a 1-lb. level from then on."

"You were satisfied with the results?"
"We figured it did an excellent job. And since then we don't start a flock without nf-180. It helps with blackhead, takes care of enteritis . . . in fact, nf-180 has taken care of most everything that's happened to turkeys on this farm."

"How is your feed conversion?"
"We have very good feed conversion. I think that nf-180 helps the birds do all they are capable of doing. If you keep your birds clean inside, they can't help but grow."

best profits ever!" *says R. T. Maddox*

the nf-180, and most of the flocks had better lay than last year. We started out the season at 76% hatchability and our overall average was 69% hatchability for the season."

"How does that compare with flocks which didn't have nf-180?"
"Last year without nf-180 we had a 51% average hatchability."

"Do you think nf-180 gives any other benefits?"
"Yes, I do. It helps considerably to hold down blackhead. In general, it helps control all diseases. That's why I'm using nf-180 in my growing flocks this year, too."

"One last question. Have you ever recommended nf-180 to other people?"
"Yes. If you have something but you don't know what it is, the best thing is to use nf-180. It covers a wider range of diseases than most anything."

feeding can win new customers for you

feeds. nf-180 does more to boost the reputation of your turkey feeds than any other drug. It helps keep customers satisfied...reduces service calls...gives your growers a better chance to produce meat at a profit.

The reason is simple. nf-180 is the only drug that offers such wide-range disease-effectiveness. In fact, it prevents and controls more turkey diseases than any other drug you can use.

What's more, nf-180 is palatable. It stimulates feed intake, improves growth and feed conversion, protects birds against stress. It's safe for birds of all ages, including those highly valuable breeder flocks.

The chart on the next page shows how nf-180 gives your feeds disease-fighting versatility never equalled by antibiotics or other drugs. It also describes how you can set up a simple, effective nf-180 protective feeding program. See for yourself how it can help your customers make more money. See how it can help you make more money, too. Then ask the Hess & Clark representative who calls on you to work out the details of getting started. Or write Hess & Clark, Ashland, Ohio, and we'll see you get fast attention.

nf-180 prevents and controls more turkey diseases than any other drug

Comparison of nf-180 (furazolidone) with other drugs used in turkey feed medication

DRUG	Growth Stimulation	Typhoid & Pullorum	Paracolon	Para-typhoid	C.R.D. Sinusitis	Blue Comb	Hexa-mitiasis	Synovitis	Ulcerative Enteritis (Quail Disease)	Black-head	Stress Periods
***nf-180** (furazolidone) Level (grams)	YES 7½-10	YES P-50 T-100	YES P-100 T-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-100 T-200	YES P-50 T-100-200	YES P-50 T-100-200	YES P-100 T-200	YES P-50 T-100
Chlortetracycline Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	YES P-50 T-100	YES P-100 T-200	NO	NO	YES P-50 T-100
Oxytetracycline Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	YES P-50 T-100	YES P-100 T-200	NO	NO	YES 50
Bacitracin Level (grams)	YES 7-10	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	NO	NO	NO	NO	YES P-50 T-100
Penicillin and Streptomycin Level (grams)	YES 2-5 (for penicillin)	NO	NO	NO	YES 75 Strep 25 Pen	YES 75 Strep 25 Pen	YES 75 Strep 25 Pen	NO	NO	NO	NO
Penicillin Level (grams)	YES 2-5	NO	NO	NO	YES T-100	YES T-100	NO	NO	NO	NO	NO
Penicillin and Bacitracin — 37½B plus 12½P Level (grams)	YES 5 Bac 1 Pen	NO	NO	NO	YES P-50	YES P-50	NO	NO	NO	NO	NO
Erythromycin Stearate	NO	NO	NO	NO	P-? T-YES	P-? T-YES	NO	P-? T-YES	NO	NO	NO
2 - Acetylamino 5 - Nitrothiazole	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-YES	NO
4 - Nitrophenyl Arsonic Acid	NO	NO	NO	NO	NO	NO	NO	NO	NO	P-YES T-NO	NO
A Sulfa—Tin—Arsenical Combination	YES	P - ? T - NO	NO	NO	NO	P-YES T-NO	P-YES T-NO	NO	NO	NO	NO

KEY: P. Prevention level in grams per ton of complete feed
T. Treatment level in grams per ton of complete feed

*Each pound of nf-180 contains 50 grams of furazolidone

Look how easy it is to set up an nf-180 protective feeding program

Right from hatching, turkeys are threatened by diseases and stresses. No matter how ideal the management may be, poults are critically sensitive to stresses which lower their disease resistance. Protective feeding with nf-180 reduces the chance of a serious disease outbreak . . . keeps birds healthy, gaining and profitable. Here are plans that fit your needs:

1. **STARTING PERIOD** . . . use 2-lb. level in all feed from start, through brooding and first week on range.
2. **GROWING-FINISHING PERIOD** . . . check your past history and local disease problems. Choose the protective feeding program you need:
   - 2-lb level continuously should be used to protect against blackhead, hexamitiasis and other diseases.
   - 1-lb. level continuously gives wide protection against stress and many diseases where blackhead and hexamitiasis are not likely problems.
   - week-a-month plan for areas where disease is not a serious problem. Many growers report good luck using a 2-lb. level of nf-180 stress feed one week a month to clean up birds, fight stresses and knock out disease organisms before they can build up and trigger trouble.
3. **BREEDER FLOCKS** . . . as soon as birds are selected put them on a feed with 2 lbs. nf-180 for 2 weeks. Then switch to a feed containing 1 lb. of nf-180 and keep breeders on this level through the laying season. In case of severe stress or disease outbreak, put birds back on the 2-lb. level until the danger has passed.
4. **TO TREAT SPECIFIC DISEASES** . . . use a feed with a 2-4 lb. level of nf-180. Refer to chart above for proper level.

Why take chances with drugs that fight only one or two diseases? Use nf-180, the one drug . . . the only one . . . that offers wide-range effectiveness.

Protect birds—from poults to processor—with nf-180.

HESS & CLARK, Ashland, Ohio
Division of Vick Chemical Company

nf-180® brand of furazolidone

Kentucky Research Shows Advantages Of Drylot Feeding

LEXINGTON, KY. — What started out as an experiment on sheep breeding wound up as a nutrition test which may cause sheepmen to do some "serious thinking."

So reports Prof. Ray Dutt, geneticist at the University of Kentucky.

Prof. Dutt explained that he divided ewes with late April lambs into two groups, with the lambs from one group weaned at 21 days and put in a drylot.

"The project was to determine if the ewes, whose lambs were weaned early, would come into heat," Mr. Dutt said, "but they did not. However, the drylot lambs got along very well with a complete ration."

These lambs, Prof. Dutt said, weighed about 55 lb. on an average at 80 days, which was about 4 lb. more than the lambs allowed to remain suckling their dams and had fewer parasites.

"Such early weaning and drylot feeding of lambs is not a practice in Kentucky," Prof. Dutt continued, "as most lambs are sold off the mother at market time and almost all have been pastured with the dam.

"But the good luck we had in this trial batch indicates there is some food for thought, at least by Kentucky sheep producers," he said.

He noted that drylot feeding was higher in cost than pasturing, but the drylot may have saved money since these lambs did not have to go through drenching procedures to control parasites.

Idaho Limestone Said Good Calcium Source

MOSCOW, IDAHO — Idaho has within its borders large deposits of limestone that constitute a satisfactory source of calcium for both growing chick and laying rations, University of Idaho scientists have pointed out.

Researchers said university trials with limestone from a large deposit in Owyhee County indicated the native product is "equal to oyster shell."

Donald H. Lumijarvi and C. F. Peterson of the department of poultry husbandry said poultry feeding experiments with calcium from the Owyhee County deposit represent a continuation of work the university has been doing in exploring the suitability of various Idaho limestone deposits in poultry rations.

Lying in an old lake bed, the deposit figuring in the latest trials is of sedimentary origin. For this reason it is soft and easy to mine. Estimates indicate the deposit contains at least 75 million tons of limestone. Calcium content ranges from 35.5 to 37.9% with no harmful amounts of fluorine or magnesium, according to the scientists.

Limestone deposits receiving attention previously were located in central, northern and eastern Idaho. All of these other deposits are of calcite formation and are harder and more difficult to mine. However, tests by the university and at other agricultural experiment stations have shown that this calcite type limestone also is satisfactory for use in poultry and livestock feeds.

Oregon Firm Named To Handle Bulk Tanks

KANSAS CITY, MO. — Teeples & Thatcher Co. of Portland, Ore., has been appointed contractor for Black, Sivalls & Bryson, Inc., bulk feed tanks, according to M. G. Purpus, vice president and manager of steel products division sales for BS&B.

Teeples & Thatcher will handle BS&B's complete line of bolted steel tanks, bulk feed tanks and corrugated tanks in the Washington, Oregon, Idaho and northern California region.

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MEAT AND BONE MEAL
QUALITY-PRODUCED BY:
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IN BAGS
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NEWS FROM Blatchford's ESTABLISHED IN 1800
3 IMPROVED FORTIFIERS
★ New Stepped-up potencies . . . low mixing costs . . . more uniform distribution to meet today's need for greater feed efficiency.

Again, Blatchford's moves ahead to help you sell more! Blatchford's new stepped-up fortifier potencies assure you the improved, high-energy feeds your customers want for better weight gains. Now, you have a choice of 3 improved-fortifier package sizes to meet the exact needs of your equipment . . . assure easy, accurate fortification at low costs. Mail coupon for latest information today.

NEW VITADINE (100 lbs.)
100 lb. Bag! New increased micro-ingredient potencies properly balanced for safe, sure, high-energy maximum-growth feeds. Used at 5% levels, new Vitadine (100 lb.) mixes easily . . . assures ideal distribution in ordinary mixers at normal mixing time rates.

NEW VITADINE XX (50 lbs.)
50 lb. Bag! Delivers same increased-fortification efficiency as Vitadine 100 lb. Used at 2½% levels, in some types of feed mixers new Vitadine XX may require longer mixing time to assure complete uniform distribution.

NEW NUTRIFFIC (10 lbs.)
10 lb. Bag! Same improved fortifications as Vitadine and Vitadine XX. For best distribution of fractional vitamins and minerals, we recommend that new Nutriffic be pre-mixed with suitable carrier for mixing with the finished feed at levels of from 2½% to 5%. Proper mixing equipment is also needed to assure uniform distribution.

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SWINEX
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Future of Hog Industry, Competition From Other Meats Discussed at Georgia

By DR. R. F. SEWELL
University of Georgia

ATHENS, GA.—In a conference recently held at the University of Georgia a group of swine producers, meat packers, feed men, sale barn operators, bankers and college personnel met to discuss the future of the hog industry in Georgia.

Dr. J. C. Purcell, agricultural economist, Georgia Experiment Station, set the stage for the conference as he discussed recent changes in the demand for pork and competition from other meats. He indicated that hog prices have trended downward during the period from January, 1952, through June, 1958, with a corresponding decline in the per capita demand for pork. Greater competition from beef and poultry meat was cited as important factors in this trend.

Dr. Purcell suggested that pork and poultry are greater competitors at the meat counter since consumers apparently consider these two meats to be close substitutes. He indicated that prices received by Georgia producers for hogs were closely related to national prices. Changes in local supplies of hogs apparently have little effect on hog prices unless accompanied by a corresponding change at the national level, Dr. Purcell stated.

A greater number of meat-type hogs available for slaughter during the past few years would have resulted in a higher quality product with more consumer appeal. This would have had considerable effect in altering the downward trend in pork consumption by placing pork in a better position competitively with other meat supplies, according to an opinion expressed by W. C. Haase, Swift & Co., who discussed the importance of producing the right kind of hog for today's market.

Specification Buying

Harold Clum, livestock marketing specialist, cited more specification buying by chain store outlets and new innovations in processing and retailing pork as major factors that are influencing present hog marketing systems.

New research developments in swine breeding, nutrition, housing and disease control are going to make profits increasingly dependent upon the hog producer's ability to keep aware of and apply these latest techniques, was the opinion expressed by Dr. R. F. Sewell, associate professor, University of Georgia.

Greater specialization and larger operations that are organized and equipped to apply the latest in scientific technology to hog production will be the trend in the future, Dr. Sewell stated. He said that those who hold to out-moded production techniques will become relatively less efficient than the average.

He said that with a greater premium on superior management and a resulting wider profit variation among individual producers, the efficient producer can be expected to invariably become larger while the inefficient producer will become smaller. This does not necessarily mean that the small producer will be eliminated, he said, but it does mean that he will have to become more efficient in order to compete successfully.

More Control

The large specialized hog operation will be in a position to exert greater control over the quality of pork being produced, Dr. Sewell said. More uniform marketing should result in a smoothing out of the traditional seasonal patterns in the hog cycle. This in turn will result in a larger and more constant volume of quality hogs going to market so that the processing industry will be able to more fully utilize their plant and labor forces.

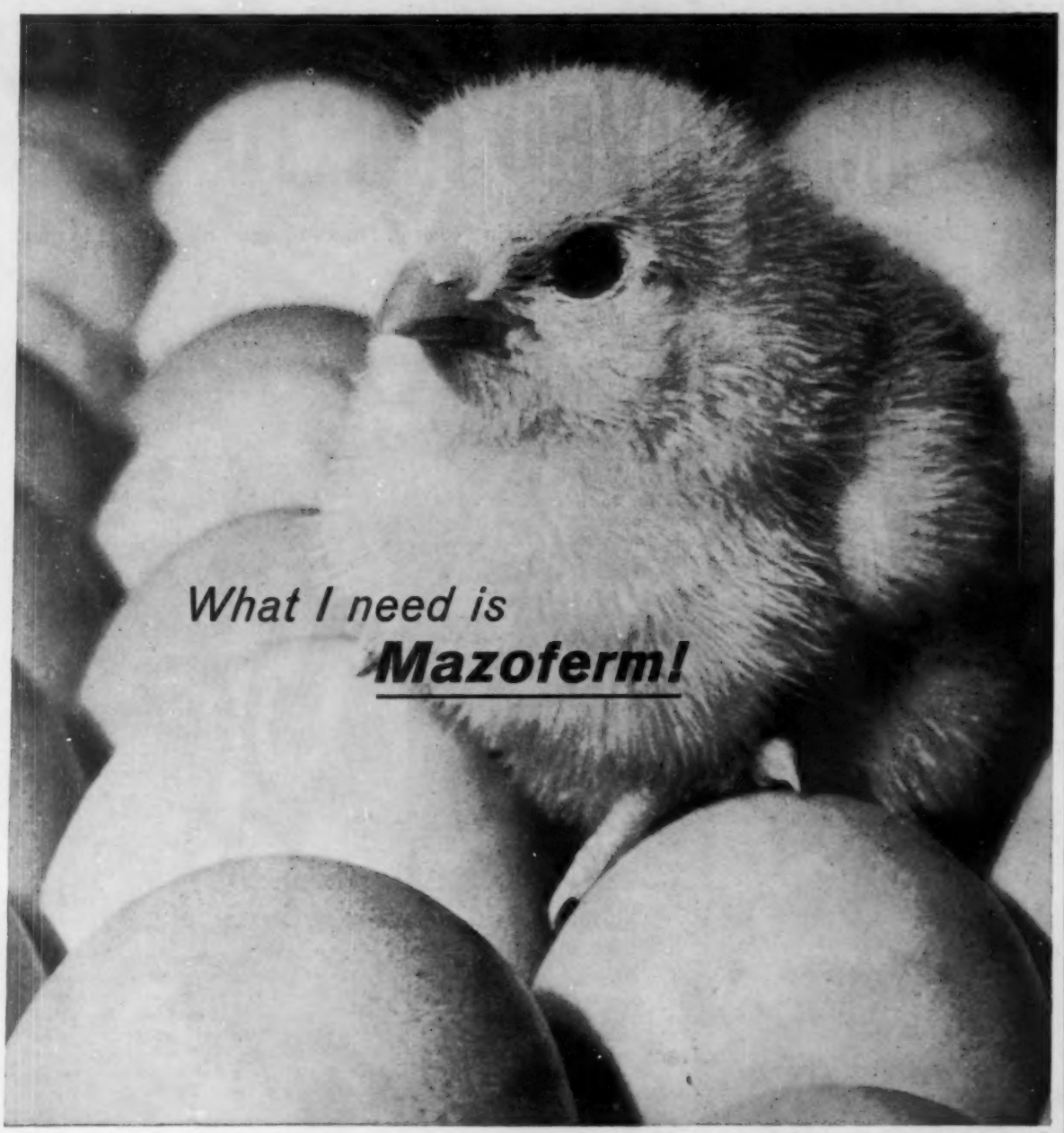
Hogs can be produced profitably in Georgia with grain barged in from the Midwest, but Georgia should be in an even better position to supply the area's demand for pork as local grain production is increased, Sam Bible, Walker County swine producer, told the conference.

Local corn production helps greatly in stabilizing the price of corn in this area, Mr. Bible continued. Small grains and grain sorghum offer considerable promise as feed for hogs in this region, according to Mr. Bible.

Better land selection, greater use of fertilizers and heavier plant population were factors cited by J. R. Johnson, agronomist, Georgia Extension Service, which were needed to increase local grain production. Corn production can be increased by 80 million bushels annually by proper application of these methods, Mr. Johnson told the conference.

Equipment Installed

DES MOINES, IOWA—Hot Spot Detector, Inc., Des Moines, has announced that its grain temperature systems have been installed recently at 43 locations in 13 states. Distribution of the installations is: Nebraska, 8; Texas, 3; Michigan, 2; Missouri, 4; Ohio, 3; Iowa, 4; Illinois, 5; Kansas, 8; California, 2; Oklahoma, 1; Wisconsin, 1; Colorado, 1, and Mississippi, 1.



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Egg Producer Needs Good Marketing Service, North Carolina Group Told

By Special Correspondent

RALEIGH, N.C. — "Today's hens have a real problem," Dr. Ralph Baker, professor of agricultural economics at Pennsylvania State University, told more than 100 persons attending the first egg industry conference at North Carolina State College, Raleigh.

The two-day program recently attracted poultrymen and representatives from allied industries from Virginia and the Carolinas.

"The American people," Dr. Baker continued, "stay in bed until the last minute each morning and then jump up and eat a quick breakfast or maybe none at all. The hen's product—the egg—must take a back seat."

Dr. Baker reported the decline in egg consumption since the Korean war. The only major surplus egg-producing area in the country is the Midwest and the Northeast is the major egg deficient area.

Dr. Baker, who conducted a six-month survey on the national egg production picture for the U.S. Department of Agriculture, outlined the three major types of integrated egg programs: (1) contract marketing and quality control, (2) contract production, and (3) owner-integrated operations.

"Last year," Dr. Baker said, "the poultry and feed business amounted to $51 million."

"With prices falling and consumption declining," he concluded, "the egg producer must be lined up with a good marketing organization if he expects to stay in business."

Dr. E. W. Glazener, head of the state college department of poultry science, presided over the program.

The program opened with registration and a movie on egg automation. Following a luncheon, the instructional portion began with Dr. Baker key-noting the conference theme with a general picture of the egg programs and integration.

Next on the agenda was a panel discussion on egg quality. Participating were Prof. D. Fromm, research, poultry products, North Carolina State College; Reece McSwain, egg producer, Albemarle; Tom Johnson, egg distributor, Shelby, and Prof. James Peeler, department of agricultural economics, North Caroline State College.

Care of Eggs

Mr. McSwain outlined five facts to remember in the care of eggs on a farm: "(1) collect eggs four or five times daily, (2) wash and clean immediately, (3) cool for 10 to 12 hours, (4) oil and case them and (5) keep refrigerated until delivered to warehouse—this should be done two or three times each week."

Mr. Johnson discussed how egg quality is maintained. "When the egg is laid," he said, "it is of high quality, so it depends on all who handle it from the nest to the breakfast table to maintain this quality."

He stated that the producer should keep a clean and dry nest and floor. He should wash only the dirty eggs, using a sanitizer. Most dirt can be removed with a sanding brush, he said.

Eggs should be cooled thoroughly before packing. They should be packed in good cases using clean flats and fillers. They should be placed in a cooler set at 60°, Mr. Johnson added.

Eggs should be picked up at the farm twice each week and moved directly to market. For picking up, if the trucks are not refrigerated, they should keep trips short so eggs will not be out of cooler for a long period of time. Eggs must be shipped to market on refrigerated trucks, he pointed out.

Following a talk, "Fresh Fancy Quality Control Program," by Fred Pepoon, federal-state supervisor for the poultry division, Agricultural Marketing Service, U.S. Department of Agriculture, the first day's program ended.

Dr. F. R. Craig, research, poultry pathology, N. C. State College, began the second day's discussions with "Diseases, Drugs, and Egg Quality."

Quality Conscious

Dr. Craig stated that the consumer is rapidly becoming conscious of the real meaning of egg quality. The industry, he added, as a means of competition, is promoting quality, thereby increasing quality consciousness.

"Quality consciousness, egg laws and new grading methods will no doubt bring out into the open many quality problems that have been with us for a long time. This is particularly true with the problem of thin whites.

"In the past," he continued, "interior quality studies were usually made only when exterior quality was adversely affected. Quality studies in the future will have to be expanded in anticipation of adverse effects."

He reported that Newcastle disease and infectious bronchitis produce by far the greatest known amount of deterioration of egg quality. Shells become thin and rough, shape may be extremely abnormal and interior quality may be affected to the extent that no thick white is produced, he said. These adverse effects, he added, become permanent with some birds, and keeping quality is reduced to the extent that storage of eggs following an outbreak of these diseases is a poor risk. Prevention is of paramount importance and can be accomplished with a sound vaccination program, he said.

Dr. Craig pointed out that nonspecific diseases producing diarrheas and subsequently badly-soiled litter increase the number of dirty eggs and some reduction in quality.

"Nicarbazin, a widely-used coccidiostat, may adversely affect egg quality by producing a high percent of mottled yolks. Arasan, a fungicide used in treating seed grain, is quite toxic for poultry. Shape, shell and albumen quality are severely affected," Dr. Craig said. "Fortunately, the adverse effects produced by Nicarbazin and Arasan are not permanent, with

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full recovery occurring in a few days after removal of the chemicals."

Oviduct infections, he said, may be responsible for the production of eggs with off-color, off-flavor and off-taste.

Dr. Craig stated that, in general, antibiotics and other drugs have had only limited usage in improving egg quality. Therefore, they should not be used promiscuously, he said.

Dr. Craig stated that when quality problems appear, eggs should be identified completely as to production area, grading station, flock owner, breed and strain, feed and feeding program, health status of flock and health program. A representative sample should be submitted for diagnosis. Good record keeping is important, he noted.

"Don't waste time. Remember—the cause of quality deterioration may have occurred several weeks prior to discovery of the problem," he said.

Performance Goals

W. G. Andrews, extension poultryman for North Carolina State College, outlined performance goals for 1960. He suggested three factors to consider in determining goals: (1) replacement cost—reduce while keeping quality, (2) depreciation cost—produce all eggs possible in order to hold depreciation cost at 7¢ or less per dozen and (3) high production—good feed efficiency and hold average cost per dozen eggs to minimum.

Dr. Andrews presented three performance goals. For growing pullets from one day through first year of laying, he suggested 100 lb. of feed. Secondly, he recommended 4 lb. of feed to produce one doz. eggs. And finally on egg production, he suggested a goal of 20 doz. eggs per layer in a 12-month period.

The final highlight of the program was a panel discussion on trends in egg marketing. Panelists were A. P. Stemberger, research, agricultural economics, North Carolina State College; Maurice Pickler, egg producer and distributor, Albemarle; John W. Hamby, Jr., manager of the egg marketing division, Central Carolina Farmers' Exchange, Durham, and Dr. Baker.

Mr. Stemberger opened the discussion commenting on developments in marketing over the last 15 years. "These developments," he stated, "have shaped present trends but are not completed developments, only processes of development."

He reported the supermarket selling thousands of commodities in large volume six days every week has led to large-scale buying on the part of the stores.

He added that development of new products and intense promotion of these products bring competition for shelf space in stores and high incomes lead to desire for new products and more built-in services.

Today's working wives increase the desire for built-in services and for one-stop shopping, Mr. Stemberger said.

"And the final trend," he stated, "is the growing appreciation of quality."

Poultry Group Raps New Inspection Plans

ATHENS, GA. — The board of directors of the Southeastern Poultry & Egg Assn., in session here recently, passed a resolution asking Ezra Taft Benson, secretary of agriculture, to set up an industry committee to screen proposed changes in regulations for poultry inspection.

The resolution followed a controversy which began weeks ago when inspection officials proposed a new set of regulations. A central part of the current controversy is a proposal to force processors to slow down their conveyor lines to allow a minimum of 90 seconds for bleeding time after the birds are killed and before they are placed in the scalding tanks. Another point of controversy is that which would require separate weighing of the giblets.

The resolution as passed by the SEPEA board states in part that some of the present proposed changes, if put into effect, will involve expenditures that could have been avoided had the processors known what changes were to come when they were building new facilities and remodeling last year. Plants were engineered and plans approved by the department to provide for specific operation procedures. The regulation changes now being proposed will cause many of the companies to make physical changes in their plants."

KENT "RESEARCH ROUNDUP"—Salesmen of Kent Feeds, Inc., Muscatine, Iowa, gathered recently at the company's research farm to hear reports on tests with Kent feeding programs. The occasion was the firm's annual "Research Roundup." In the above picture, a group of salesmen is gathered outside 12 pens of cattle, trying to match them with 12 different feeding programs used in a research project. The results of this and other livestock and poultry feeding tests were reviewed for the salesmen by the Kent nutrition research staff.

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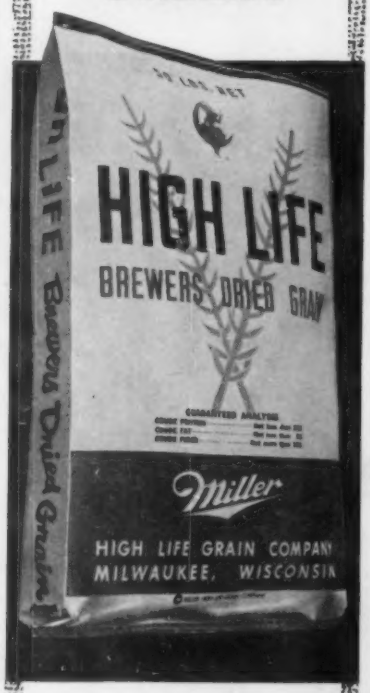

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Research 'Mecca' For Swine Industry Previewed at Illinois

By JAMES E. SHARON
Feedstuffs Staff

URBANA—A preview of what may become a research "mecca" to the swine industry and already is being hailed as the first college-industry facility to go all-out on both basic and applied research was presented to a large delegation of the agricultural press and industrial representatives at the University of Illinois, Nov. 16.

Now under construction, it will be known as the University of Illinois Moorman Animal Breeding Research Farm. The 90-acre farm is being established on university land with a $200,000 grant from the Moorman Mfg. Co., Quincy, Ill. By the time it is completed in 1961, the farm is expected to include at least 20 experimental buildings—no two alike—and to have developed into more than a 1 million-dollar installation. A 360-sow herd will be maintained, with 60 sows farrowing every 60 days and total annual numbers reaching nearly 1,800 head on the farm.

Dr. O. Burr Ross, head of the university's animal science department, and his staff will have the primary responsibility of operating the farm. In addition, scientists from the College of Veterinary Medicine, Agricultural and Civil Engineering departments, and Public Health Service will work closely with the animal science staff.

As the project develops, said Dr. Ross, it also will include work with cattle and sheep. At the start, however, it will deal with swine production, all the way from breeding to management, environmental, disease and engineering problems.

Factors to Be Studied

Researchers will simultaneously study such factors as (1) building design and construction, (2) different housing systems, (3) manure handling and disposal, (4) ventilation, heat and air conditioning, (5) "disease-free" pig production and (6) equipment and automation. In all areas, pointed out one university specialist, efforts will be made "to provide the missing link between laboratory studies and the large-scale producer." While evaluation of data is expected to be a gigantic task, it will be processed through the university's Illiac, an electronic unit which quickly analyzes all factors in the project.

RESEARCH FARM UNVEILED—Speakers at the recent preview luncheon which marked the unveiling of the University of Illinois Moorman Animal Breeding Research Farm at Urbana were, from left: Dr. O. Burr Ross, head of animal science at the university; F. T. Wall, dean of the graduate school; Dean Louis B. Howard of the College of Agriculture, and E. H. Wilson, president of Moorman Mfg. Co., Quincy, Ill. The firm established the cooperative college-industry venture with a grant for $200,000.

Researchers will initiate an elaborate swine breeding program, it was explained, starting with original litters taken from the sows by Caesarean section to produce "disease-free" pigs. Successive generations will farrow naturally but in isolation quarters. No additional breeding stock will be brought in. The farm will be completely surrounded by a high fence, and all visitors, employees and researchers will enter through a special gate house. There they will receive sterilized boots and laboratory coats. Dr. Ross explained that these measures are necessary to keep the farm disease-free, pointing out that disease is one of the principal problems facing swine producers today.

Speakers

Principal speakers on the preview luncheon program, in addition to Dr. Ross, were Dean Louis B. Howard of the College of Agriculture; E. H. Wilson, president of Moorman, and F. T. Wall, dean of the university's graduate school.

After the luncheon, the group toured the farm site near the campus, where one 30 by 64-ft. farrowing barn is being completed. The large, rigid-frame structure will house 22 research sows and is designed to test a multitude of ways for providing the best possible year-round farrowing environment for sows and litters. The University of Illinois scientists are reported to believe a unit for heating, cooling and ventilating individual farrowing stalls would be practical. Once manufactured, farmers could use it in many buildings without major remodeling. It would also simplify installation of farm heating and ventilation systems.

All three university speakers paid tribute to the Moorman firm for its "far-sighted approach and leadership in evidencing industry interest in not only nutrition research but breeding and management as well."

Mr. Wilson, in his remarks, said, "Great strides have been made in getting and using new knowledge of livestock nutrition. But might it be possible that we are approaching a 'plateau' where further major advances in nutrition could depend on progress in other limiting areas? Many, many years ago we used to talk about bringing the feeding level up to the breeding level.

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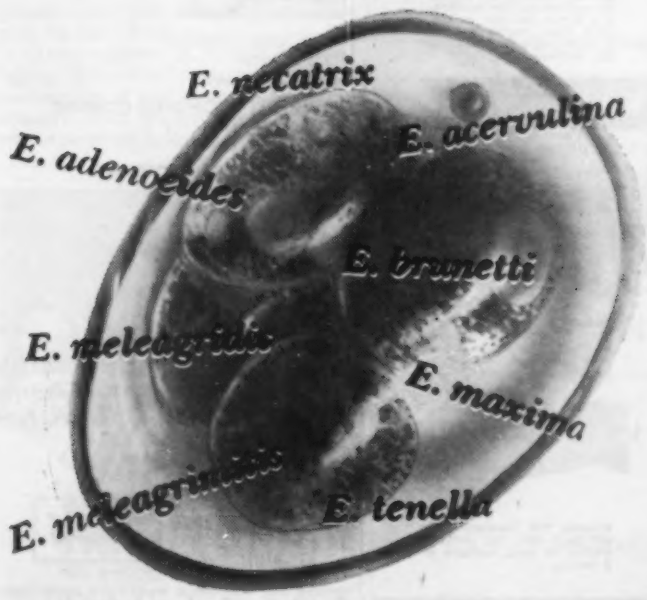

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PILLSBURY SALES MEETING—Fifteen men turned out for the three-day sales training meeting held recently by Pillsbury's Best Feeds for dealers and salesmen at Watertown, S.D. The sessions were conducted by Frank Steinmetz, director of training and personnel, and Eugene Spencer, sales training manager. In on the session were (left to right), rear: William Barnes, Madison, S.D.; A. B. Gilbertson, Redfield, S.D.; Lloyd Shinnick, Redfield, S.D.; Dale Borchard, Clark, S.D.; Eldon Fockler, Colton, S.D.; Hans Ludvigson, Windom, Minn., and Chuck Walter, Gering, Neb.; front, Eugene Spencer, Clinton, Iowa; Dan West, Alliance, Neb.; Hollis Sanders, Redfield, S.D.; Jack Hawkins, Jr., Gering, Neb., and Frank Steinmetz, Clinton, Iowa. Others were not able to be present for the picture.

geneticists. It seems entirely possible that in the next two decades the next steps forward in animal agriculture could be through a linkage of improved breeding knowledge and greater nutritional and management know-how.

"We feel this new Animal Breeding Research Farm is a kind of basic research work that ordinarily would not or could not be undertaken by a private organization. We felt it could be important enough in the over-all animal picture to justify a major contribution where the results could be of lasting benefit to all animal agriculture in the future."

"Our expectations," he concluded, "are that in addition to providing the livestock farmer greater efficiency of production through breeding research, there will be such by-products as improved recommendations on feeds and feeding practices, housing, equipment, disease control and many other closely-associated areas connected with livestock production."

Stock Split Proposed

NEW YORK — Directors of the Borden Co. recently proposed a two-for-one split of the company's common stock, subject to approval of stockholders at a special meeting Jan. 5.

Harold W. Comfort, president, stated the directors would give favorable consideration to increasing the dividend at their January meeting.

The directors declared a final 1959 dividend of $1 per share, payable Dec. 19 to stockholders of record Dec. 4.

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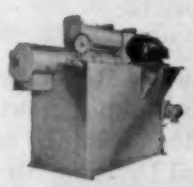

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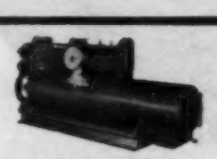

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D. W. Thomas Joins Van Waters & Rogers

DENVER—Daniel W. Thomas has been appointed agricultural sales representative for Van Waters & Rogers, Inc., with the new branch office here.

D. W. Thomas

Mr. Thomas will handle the sale of fertilizers, animal health and feed additives, farm chemicals, wire, twine and other agricultural supplies in Colorado, southeast Wyoming, western Nebraska and northern New Mexico.

He graduated from Brigham Young University, Provo, Utah, with a B.S. degree in animal husbandry and marketing. Prior to joining Van Waters & Rogers, Mr. Thomas was with the farm service division of General Mills, and the Kelly Western Seed Co.

Self-Help Marketing Urged for Poultrymen

SACRAMENTO, CAL.—The California State Board of Agriculture recently urged Congress to enact enabling legislation which would embody the "self-help marketing principles" for all agriculture, and "especially for the fryer, turkey and egg producers of the nation."

The purpose of such legislation would be "so that these agricultural producers may control their overproduction, stabilize their prices and returns for their products and thereby avoid further financial insecurity and the necessity of accepting the 'top down' form of integration which is undermining the independent status of so many of our producers," the group said.

The board heard several reports from University of California and California Department of Agriculture economists on integration in agricultural industries, then adopted a resolution reaffirming its "faith in the effectiveness of cooperative marketing organizations," and in the "self-help" marketing order programs operated in California under the provisions of the California Marketing Act.

Denver Cattle Sales Double Last Year's

DENVER, COLO.—The last of three special fall feeder cattle sales at Denver recently was held with 10,000 head of cattle selling for more than $1½ million. It raised to 27,000 the number of cattle sold in the three sales at the Denver stockyards. Last year, 13,000 head were sold in the three sales.

Cattle raisers in Colorado, Wyoming, Utah, New Mexico and Kansas consigned cattle to the sale. Purchasers were feedlot operators and cattle feeders from Colorado, Texas, Iowa, Illinois, Indiana and Kansas.

A total of 64 carloads were entered in the competition held in connection with the sale. The grand champion carload of steer calves was consigned by Vic Hansen, Jr., Walden, Colo. They were purchased for $34 per cwt. by Mitchell & Rawand, Oswego, Ill. The calves averaged 365 lb.

The high-selling load of steer calves was 312-lb. Herefords sold for $33.50 per cwt. by Tom McQuade, Fairplay, Colo. The top-selling load of heifers also was Herefords and was sold by the Floowing M Cattle Co., Roggen, Colo., for $23.75.

NEW MILL OPENS

MELROSE, MINN.—The Melrose Feed Mill is opening for business, Harold Rothfork, owner, says. The new building measures 100x36 and the mixing room 26x26. The mill will do grinding and mixing and carry a line of various feeds. Frank Maleska will be manager.

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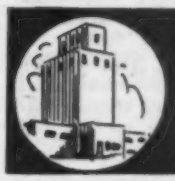

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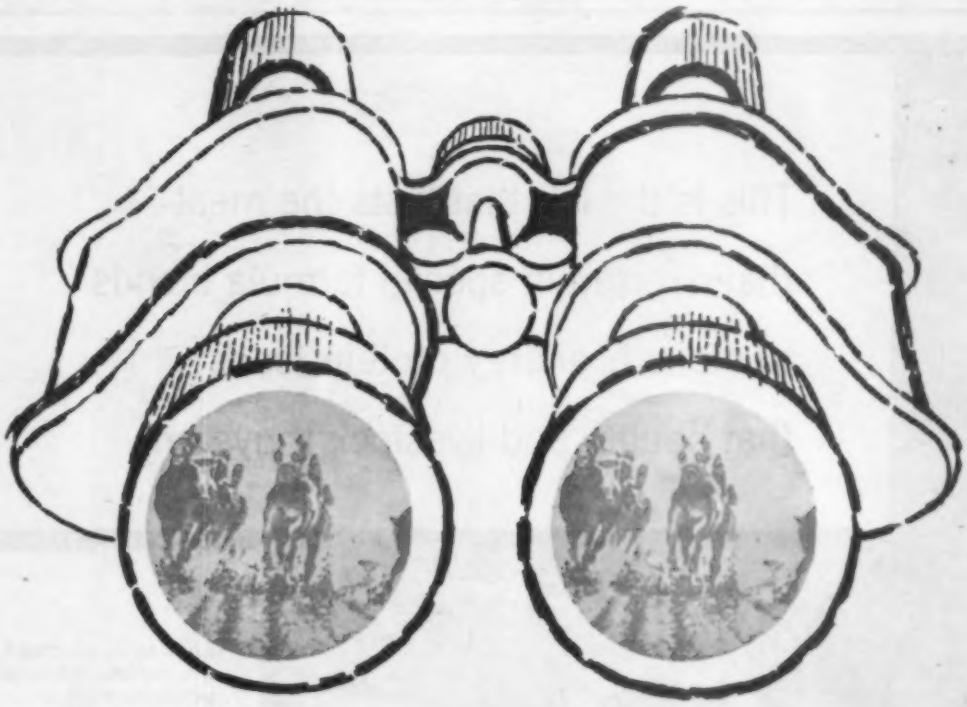

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Different Fat Sources For Broiler Feeds

By Dr. E. L. Stephenson, D. Hamm, L. Tollett and J. Yates
University of Arkansas

Since the early 1950's, animal fat has been available to broiler feed mixers at an economically favorable price. Most of the vegetable oils, which are known to have higher productive energy than the animal fats, were not available at a price that made use economically feasible.

Limited supplies of certain fatty by-products from the vegetable fat industry can be obtained at a price favorable to feed manufacturers. Little has been known, however, concerning the feeding value of these materials, which include acidulated soybean and cottonseed soapstocks and materials sometimes described as soybean or cottonseed "foots."

Numerous inquiries from broiler feed mixers indicated that information on the feeding value of these products would be desirable.

Types of Fat Tested

Samples of acidulated soybean soapstocks, hydrolyzed cottonseed "foots," as well as a mixture of the two, were obtained and graded levels were incorporated in broiler feeds at the expense of corn. The basal diet formula used in this study is shown in Table 1.

Each experimental diet was fed to four pens of 10 chicks each. The experiments were conducted in electrically heated battery brooders with raised wire floors for a period of four weeks.

In experiment 1 the chicks were one day of age when placed on the diets, whereas in experiment 2 the chicks were three days of age. In both cases White Vantress X Arbor Acre White Rock chicks were used.

After the feeding trials were completed the data were subjected to statistical analysis according to Snedecor's 1954 Statistical Methods.

In experiment 1 there were no statistically significant differences in rate of growth. There were, however, highly significant differences in efficiency of feed utilization. As will be noted, efficiency of feed utilization tended to increase when higher levels of fat were used. This was especially true when the diet included any of the soybean products.

Data obtained in experiment 2

EDITOR'S NOTE: In the experiment discussed in this article, several vegetable fat products were incorporated into broiler rations at the expense of corn, and the rations tested. The article appeared first in the publication of Arkansas Farm Research. Dr. Stephenson is an animal nutritionist in the University of Arkansas department of animal industry and veterinary science. The other three authors are graduate students who assisted in the work. The fat sources were supplied by the Marco Chemical Co. and A. E. Staley Mfg. Co.

TABLE 1. Composition of Basal Diet

Ingredient	Amount to 100 lb. Pounds
Ground yellow corn	61.6
Soybean oil meal (dehulled, 50% protein)	25.3
Dried whole whey	2.0
Alfalfa leaf meal	2.0
Fish meal (herring)	5.0
Ground limestone	1.4
Dicalcium phosphate	2.0
Salt	.5
Dl methionine	.1
	Grams
Manganese sulfate (tech.)	8.0
Vitamin A concentrate (20,000 U.S.P. units/gm.)	10.0
Procaine penicillin	1.0
Butylated hydroxy toluene	5.7
B complex vitamin concentrate[1]	25.0
	Milligrams
Vitamin D_3 (200,000 I.C.U./gm.)	225

[1]Two gm. riboflavin, 5 gm. calcium pantothenate, 12.5 gm. niacin, and 50 gm. choline per pound of concentrate.

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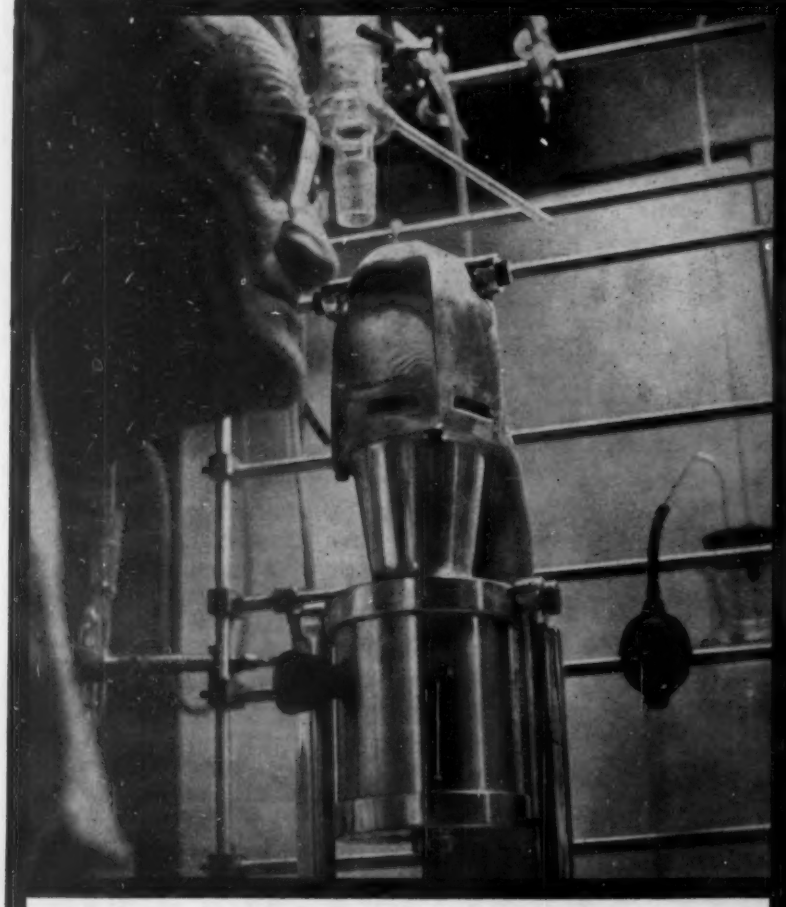

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TABLE 2. Comparative Feeding Values of Different Fat Sources for Broilers

Fat source added—	—Experiment 1— Av. wt. 4 wks.	Feed per lb. gain	—Experiment 2— Av. wt. 31 days	Feed per lb. gain.
	Grams		Grams	
None	408	1.76	522	1.94
1% special tallow	—[1]	—	538	1.86
3% special tallow	416	1.80	541	1.87
5% special tallow	—	—	517	1.83
6% special tallow	390	1.75	—	—
10% special tallow	—	—	542	1.72
1% acidulated soybean soapstock	—	—	520	1.81
3% acidulated soybean soapstock	385	1.74	538	1.78
5% acidulated soybean soapstock	—	—	560	1.71
6% acidulated soybean soapstock	398	1.63	—	—
10% acidulated soybean soapstock	—	—	545	1.63
3% hydrolyzed cottonseed "foots"	363	1.77	—	—
6% hydrolyzed cottonseed "foots"	395	1.74	—	—
3% hydrolyzed soybean "foots"	395	1.79	—	—
6% hydrolyzed soybean "foots"	394	1.67	—	—
3% mixture, hydrolyzed soybean and cottonseed "foots" 50-50	383	1.68	—	—
6% mixture, hydrolyzed soybean and cottonseed "foots" 50-50	373	1.64	—	—

[1]Not used in this experiment.

tended to substantiate the findings in experiment 1. Again, growth rates did not differ significantly, whereas there were highly significant differences in efficiency of feed utilization. Increasing the increment of either fat in the formula tended to increase the efficiency of feed utilization. More efficient utilization of feed was obtained when acidulated soybean soapstocks were fed than the special tallow (animal fat).

In recent years there have been numerous reports of toxic fractions in the fat portion of diets. These have ranged from reports of gossypol poisoning resulting from the use of cottonseed products to "X" disease (sometimes called "water belly") resulting from the use of fractionated fats. There were no evidences of these conditions in this study.

Colorado State Gets Poultry Study Grant

FORT COLLINS, COLO.—A grant to finance research on protein utilization in poultry was presented to the Colorado State University Experiment Station recently.

Don M. Turnbull, executive secretary of the American Poultry and Hatchery Federation, Kansas City, Mo., presented the $2,000 check from the federation to Dr. Robert A. Moreng, chief of the experiment station poultry section. The presentation was made during the annual meeting of the Colorado Egg Producers Assn. in Denver.

Dr. Moreng said the grant will be used to study protein utilization from both the nutritional and genetic standpoints. He will breed chickens that require both higher and lower amounts of protein and then relate these findings to egg production. This study has been supported for the last two years by the Hy-Line Poultry Farms, Des Moines, Iowa.

Discussing egg promotion and advertising, Mr. Turnbull, who also represents the National Egg Council, advised the Colorado eggmen that promotion can be done rather easily, but that it is not the entire answer and cannot assure sales.

"Along with promotion, you have to merchandise," he declared. "At the state level, I recomend the establishment of a quality brand and then concentrating promotion and merchandising on that brand such as the Colorado egg producers are doing with their new egg carton for members."

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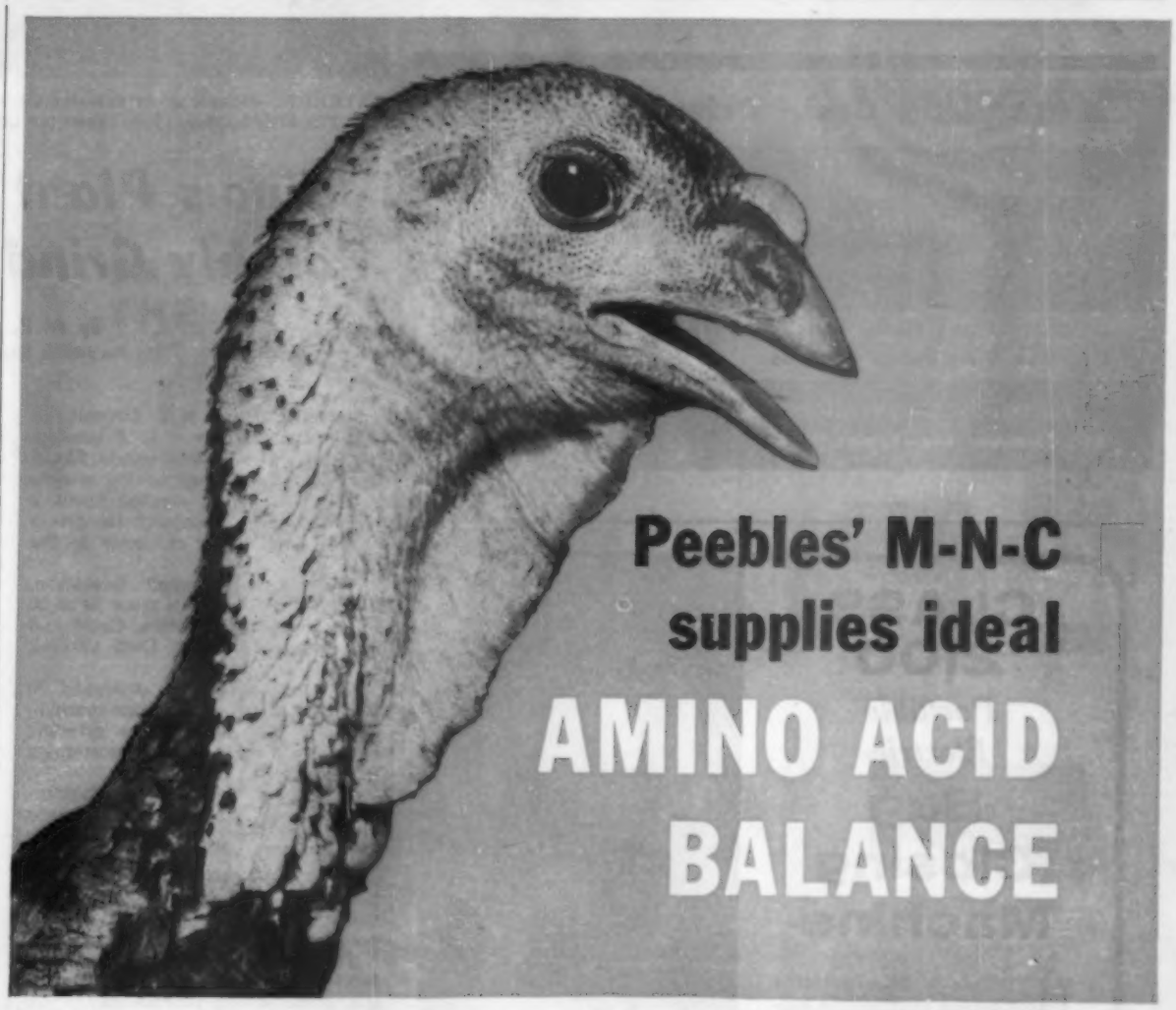

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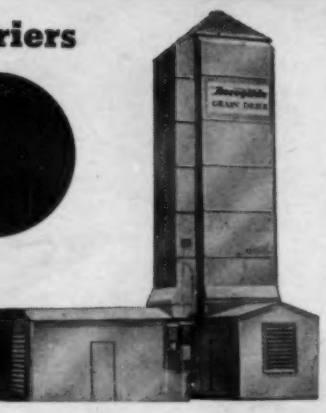

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EXTERIOR—Shown is an exterior view of the new Cooperative Supply Co. mill. The firm displays grain tanks for sale outside the mill.

Illinois Plant Has $3,000 Monthly Grind, Mix Volume

By Al P. Nelson
Feedstuffs Special Writer

Melvin Carlson, mill foreman of Cooperative Supply Co., Princeton, Ill., handles approximately $3,000 worth of grinding and mixing monthly in a new plant erected about a year ago by the company. He gets a 2 ton per manhour efficiency in the mill.

According to Russell Gustafson, manager, the mill sells from 18 to 20 tons of molasses monthly. Grind and mix rate is 15¢ cwt. Corn shelling costs 3¢ bu.

Mr. Carlson recently processed 30 tons of complete feed in one morning and also took care of the grinding and mixing needs of eight customers who drove in for service.

Cooperative Supply Co., a farmer-owned stock company, built its new mill at a cost of approximately $55,000.

About 60% of the feed sold is for hogs and 30% for cattle, reports Mr. Gustafson. The remainder is sold to poultry and dairy men.

The firm is a Purina dealer and last year sold 5,800 tons of Purina concentrates.

"We do a lot of grinding on the Check-R-Mix program—about 85%," states Mr. Gustafson. "The other 15% is drive-in custom mixing. Since so many customers accept the Check-R-Mix grinding and mixing program, this enables us to turn out more tonnage. Farmers know what the Check-R-Mix rations are for poultry and livestock and we go according to them. With custom mix work, you often have to spend much time with a farmer helping him decide as to the merits of his own formula. However, we are glad to grind and mix to any formula the farmer wants."

Bags

The feed firm uses concentrate from bags at the present time, although it is planned to erect metal tanks soon for storing of concentrate in bulk. Not only will this result in a lower price per ton to the firm for such concentrates, but it will also speed handling of the concentrates

FEEDING EQUIPMENT—Russell Gustafson (right), manager, shows a farmer some hog feeding and pen equipment.

BULK TRUCK—Here is one of the two Dodgen bulk trucks owned by Cooperative Supply Co.

OAT HULLER—Mr. Carlson is shown operating a Roskamp oat huller at Cooperative Supply Co.

through mechanical means, reports Mr. Gustafson.

Equipment in the new plant includes a 100 h.p. Jacobson hammer mill, two Jacobson 3-ton mixers, Triumph corn sheller, Roskamp oat huller and roller, Jacobson molasses blender, Kelly Duplex hoist, Fairbanks-Morse 20-ton scale, two weigh buggies, Winston hay shredder, 62 ft. elevator leg, Hyster fork lift, portable weigh scale, Clipper seed cleaner and Gustafson seed treater.

The firm has two Dodgen auger type bulk trucks. One is a 6 ton capacity and the other a 7½ ton. Much of the feed processed by the firm is delivered in bulk. About 75% of the hog feed delivered in bulk is put into feeders over the fence to reduce the disease contamination factor.

Discount

The farmer who buys bulk feed gets a discount of $4 ton from the bag price. If he wants it delivered, the charge is $2 for the first ton and $1 per ton for additional tons.

Some customers take 4-6 tons of bulk feed at a time. One large hog feeder takes 6 tons four times a week. One feeder who has 160 cattle, 340 hogs, 500 laying hens and a number of calves said that he has Cooperative Supply Co. grind and mix all his feed even though he has a hammermill of his own. He says it doesn't pay him to use his own hammermill due to high labor and other costs.

The firm has 200 farmers who are in its grain bank plan, and another 11,000 bu. grain storage will soon be added to take care of this trend.

The new mill has two dump pits—one is for grain which goes into storage and the other is for grain which goes directly into the hammer mill. The draw off spout for inside the mill grain bin storage is close to the mixer. This means the mill foreman does not have to push the weigh buggy very far to dump grain for mixing jobs.

The fork lift truck is handy around the mill and warehouse, reports Mr. Gustafson. One warehouse is located about 100 ft. from the new mill warehouse. Bagged feed and other materials in this warehouse are on pallets. Thus when a customer wants bags of complete feeds or concentrate in bags, the fork lift can pick up an entire pallet, take it directly to the farmer's truck outside and load off at the right height the exact number of bags the farmer wants. Then the fork lift takes the rest of the bags on the pallet back into the warehouse.

Another effective use of the fork lift is in placing a portable Hudson sprayer on a light truck seasonally. The firm uses this sprayer to do custom spraying for customers' cattle at 20¢ a head. The palleted sprayer is placed on the truck. Then when the truck needs to be used for other purposes, the fork lift can remove the sprayer from the truck and store it until it is called into use again.

Display

The feed firm usually has an outdoor display of hog feeders and related equipment in front of its farm supplies store adjacent to the new mill. Farmers who wish to arrange for grinding, mixing or paying bills visit this farm supply office. Thus they can't help seeing the hog feeders and other equipment outdoors. Mr. Gustafson reports that many additional sales of equipment are made through outdoor display.

FORK LIFT TRUCK—A fork lift truck is shown being used to put a palleted sprayer on a light truck at Cooperative Supply Co.

Whenever he has time, Mr. Gustafson visits customers at their farms. He talks over their feeding problems with them, and often is able to suggest better feed handling arrangements.

"Farmers appreciate visits like

SACKING FEED—Shown sacking feed is Melvin Carlson, mill foreman for Cooperative Supply Co.

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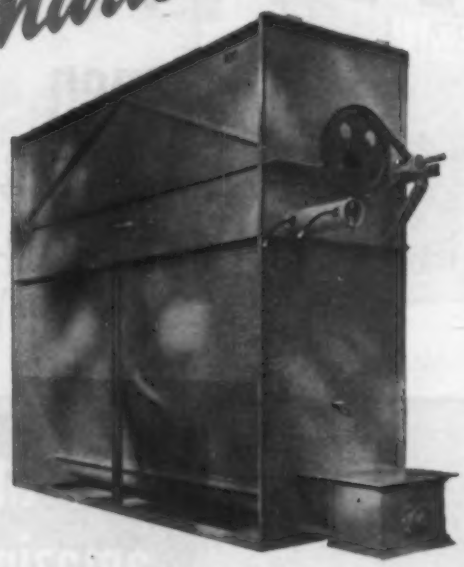

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this," he states. "It makes them feel we are deeply interested in the economic welfare of each of them, and we are. Through such visits we often uncover leads to additional sales of feed, equipment and spray service. Such visits are also important from a competitive standpoint."

For farmers who wish the service, Cooperative Supply Co. will arrange on an appointment basis free weighing of livestock. This is a service which farmers appreciate. It also gives Mr. Gustafson a month by month check on the weight gains of livestock which are fed the Cooperative Supply Co. way.

"Our large grinding and mixing volume, our one man mill operation and our high annual tonnage of concentrates sold amazes many persons," states Mr. Gustafson. "We don't think we are doing anything new or amazing. We just work hard telling the story of good feeding and back it up with service and calls on farmers. That's how we do it, and the business comes in."

SAYS 'TOPPING OFF' FEED NEGLECTED

★

SEATTLE, WASH.—Serious trouble with the law can result if the feed dealer does not provide "topping off" feed to his customers, or at least make it available to them in cases in which a medicated feed should be discontinued a determined amount of time before slaughter.

Allen Baker, supervisor of the feed, grain and chemical division of the State Department of Agriculture gave members this advice at recent district meetings of the Washington State Feed Assn., according to an association bulletin.

Mr. Baker said that a spot check showed an alarming number of cases in which "topping off" feed cannot be found in dealers' stores, even though the medicated feed is being sold.

"I would like to see the industry clean this up themselves," Mr. Baker said.

This would avoid complications and bad publicity both for the feed industry and its customers, it was pointed out.

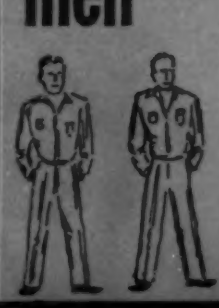
Abbott Opens Denver Sales Headquarters

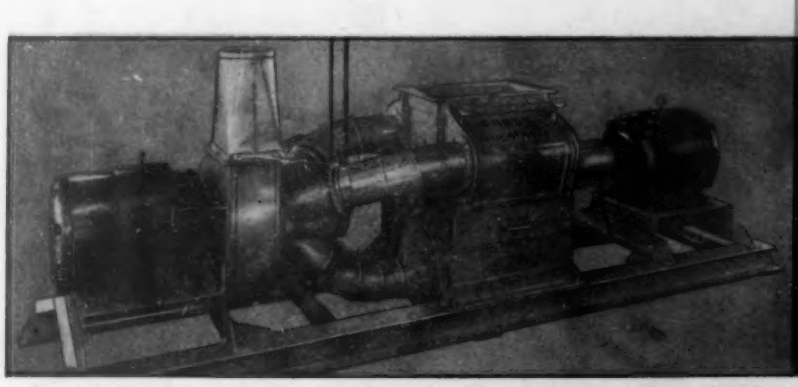
DENVER—Abbott Laboratories recently opened its new sales headquarters and distribution center here. George R. Cain, president, dedicated the new building.

Other executives from the company's North Chicago, Ill., headquarters who attended the open house were: Herbert S. Wilkinson, vice president and director of sales, and Thomas E. Braden, western field sales manager and assistant director of sales.

The Denver branch serves all of Colorado, Wyoming, Idaho, Utah and New Mexico, and part of Texas and western Nebraska. Raymond O. Vandapool is district sales manager and Denver branch manager. Supervisor of the branch is Benson W. Duff.

this mill is run by just 2 men





and this amazing new machine

Just two men run this mill in Aberdeen, South Dakota . . . turning out the same amount of feed that formerly required a minimum working crew of four to five employees.

What makes the difference? Two big money-saving ideas . . . efficient design and the new Fords Airmatic Hammermill.

Here's how Elwin Bahl, mill foreman for the Hub City Feed and Seed Company, tells the story. "Our Fords Airmatic Hammermill surpasses production many times over any previous name-brand mills I have operated. I can easily grind 400 pounds of grain a minute, over a ⅛ inch screen, which certainly does not slow down mixing, pelleting, or any other processing."

This radically new hammermill saves time and labor, increases capacity because it has *three* screens built right into it. Just twist a dial and you change grinds instantly by redirecting air through the selected screen . . . even while the mill is being fed!

This kind of performance is typical of the many mills which use Fords hammermills or other Fords equipment. Many of them have been completely designed for automated operation from a central control panel by Fords automation engineers. This automated plan piles up impressive time and labor savings, pays for itself from greatly increased profits.

Let us show you how we can furnish you the best in mill equipment, modernize your present mill, or design *and build* a complete new plant for you. Drop us a line today . . . we'll send you our new booklet on complete mill planning and construction.

No matter where you're located, a Myers-Sherman representative is always on the job whenever you need assistance. He can be at your door in a matter of hours. Write, phone, or wire us if you'd like him to visit you.

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CORN KIB-LETS
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CORN FLAKES
cooked . . . toasted
WHEAT KIB-LETS
expanded . . . kibbled
WHEAT FLAKES
cooked . . . toasted
EXPELLER SOY BEAN MEAL
and other ingredient specialties

Nowhere else can you secure such a major part of your dog food ingredients. By combining your ingredient purchases in cars, mixed cars or LCL you are assured of freshness, and better inventory control with lower inventory investment. BOXER ingredients are manufactured by us specially for dogs—they are "prime" products, and not "by-products." Write for current prices and literature.

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QUALITY DOG FOOD INGREDIENTS

Food Fad Pressure On Dairy, Meat Industries Noted

ITHACA, N.Y. — Food fads are exerting new and unsuspected pressures on the meat and dairy industries, according to a scientist at the New York State College of Agriculture, Cornell University.

In a paper published in the Proceedings of the Cornell Nutrition Conference for Feed Manufacturers, Dr. Clive McCay said fear of meat and milk in this country may force revolutionary changes on producers.

Illness prevented the Cornell scientist from reading the paper at the three-day nutrition conference which ended Nov. 13 in Buffalo. The written address, entitled "The Impact of Current Public Opinion on the Use of Foods," called for long-term testing programs with animals and humans to determine the effects of "huge amounts" of dairy products on health. Dr. McCay also proposed a central information service which would assemble facts and keep the public informed.

He said in the paper that the final effects of public opinion on the meat and dairy industries would depend on how many persons become concerned about the effects of meat and milk on their well-being. He said if the present trend away from high cholesterol foods continues, drastic changes may be forced on the dairy business.

"To avoid heart conditions which have been associated with high levels of cholesterol in the blood, many persons have turned from conventional fats to oils such as corn, cottonseed, olive, soybean and sunflower," the scientist stated. "The effects on the dairy industry may be profound. Already, new margarines are appearing on the market boasting of their content of unsaturated fatty acids. Ice cream filled with cottonseed oil is sold in some southern markets. In the not-too-distant future, feeds may need to be used to decrease the unsaturated fatty acids of cream. Butter may have to be mixed with corn oil to compete with special margarines. Likewise, ice cream may have to be changed either with lowered content of fat or part of the butterfat replaced by oils such as corn or whale oil."

Dr. McCay said breeding programs might have to be "turned completely about" and aimed toward production of low-fat instead of high-fat milk. "None of us likes to face such drastic changes, but we prefer to sell ½ lb. of butter mixed with cottonseed oil rather than give the butter to the east Indians to make ghee," he asserted.

He said meat seems to pose fewer problems than milk. "The public's chief worries arise from the small amounts of harmful chemicals which may appear in meat," he stated. He named arsenic, stilbestrol and the nitrophenides, which occur mainly in the liver. "The American public is slowly awakening to the need for much more careful testing of such products before they are fed to livestock," he said.

The Cornell scientist attributed most of these problems to the fact that knowledge of applied nutrition and biochemistry is out-running science's understanding of poisons. "We need to enter into long time testing programs both with animals and human beings," he asserted. He suggested the use of lifetime prisoners for such research—provided volunteers could be found among them.

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for complete nutritional service
Hoffman-Taff Inc.
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NEWSOME COMMISSION COMPANY
NEW OFFICES . . . . . SAME RELIABILITY
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THE 3 PURITANS
The Three Puritans symbolize the three CCC quarries—in Quincy, Illinois, Carthage, Missouri and Weeping Water, Nebraska—so called because of the high purity of the deposits.
Calcium Carbonate Company
320 South 4th St., Quincy, Illinois
Box 409, Carthage, Missouri
323 W.O.W. Bldg., Omaha, Nebraska

THERE'S PROFIT FOR YOU IN ORANGES!*

Cash in on the growing citrus pulp market (over 300,000 tons sold last year!) with the largest-selling brand,

*GOLDEN ISLE®

"Golden Isle" gives you assured supply year round! "Golden Isle" Citrus Pulp is manufactured by Minute Maid Corporation—America's leading producer of both canned citrus and citrus products. Our large volume operation and extensive warehouse facilities are your best assurance of dependable, uninterrupted supply.

"Golden Isle" gives you assured year-round quality! "Golden Isle" is specially processed to reduce fines. The fine material is screened out and pressed into pellets, which are then added to the citrus pulp before bagging. Result? A cleaner, more palatable feed. Less waste in the feeding trough and more profit to the farmer. Less fines to get up the nostrils of cattle. What's more, our strict quality control insures a substantially uniform product *all year round!* And our packaging is the finest used in the industry.

Yes, there's profit for you in oranges—with "Golden Isle." You can buy it, sell it, and recommend it...with confidence!

ALL THE ADVANTAGES OF CITRUS PULP:
A highly palatable, bulky carbohydrate concentrate that can replace up to 50% of grain requirements, with:
- 74.9% TDN
- Proved milk stimulating factors
- Factors contributing to good skeletal development
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PLUS ALL THE ADVANTAGES OF PREMIUM-QUALITY "GOLDEN ISLE":
- Less fines
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THIS BRAND
You can buy, sell and recommend with complete confidence because this is the premium quality citrus pulp!

PELLETING

(Continued from page 44)

sible that, in order to increase the air capacity of the cooling system, the fan horsepower will have to be increased as well as the diameter of the fan impeller. Usually these changes are quite simple and can significantly increase the capacity.

For example, let us assume that a vertical cooler has a capacity of 34 cu. ft. Many times a 2 ft. 3 in. section can be added to this, giving the cooler a 51 cu. ft. capacity. This will increase the capacity of the cooler for the same retention time by a factor of 50%. Let us further assume that the 34 cu. ft. cooler had a 10 h.p. drive on the fan. If the capacity were increased to 51 cu. ft., this motor should be changed to a 15 h.p. drive, and the impeller diameter changed to 26 in. Usually this impeller change will not involve any change in the fan housing.

A change in pitch of the grading shoe can be made to increase capacity. For example, a change from a 15° pitch to an 18° pitch on the screen of the grading shoe can increase the capacity of many designs as much as 25 to 30%. Another way to increase the capacity of the grading shoe is to increase the speed of the shaker drive.

Many 6 in. crumble rolls operate at 550 RPM. A 6 in. crumble roll can be safely operated at 1,000 RPM; therefore, you should check this area to see if a possible inexpensive change can help you increase production.

MOLASSES ADDITION—Since most dairy formulas will contain between 5 and 10% molasses, the feed manufacturer who is considering the manufacture of dairy pellets faces the problem of equipment for adding molasses. Many times a pellet mill is equipped with a single speed feeder conditioner. In other words the feeder screw and agitator paddles are driven through a common shaft and, of course, operate at the same speed. This particular arrangement does not lend itself to best results in molasses addition at the conditioner. The best solution to this problem is the use of a dual speed feeder conditioner.

Normally the feeder screw for a dual speed feeder conditioner should have a slower speed range than the agitator section. Many times this arrangement can be achieved by adapting existing single conditioners depending on the location of motors and other characteristics of the layout of the equipment. Other times it is more economical to just replace the existing feeder conditioner with a new dual speed feeder conditioner. In any event, this is undoubtedly much cheaper than tying molasses blending equipment into your existing system.

DECREASING DOWN-TIME—One of the main sources of decreased production is the down-time occurring when switching from one formula to another. The cooling operation can be a source of this problem.

Individually hinged automatic louvers that force the air through the pellets regardless of whether the cooler tower is partially or completely filled may be used. All the louvers are closed when no pellets are in the cooler. Then, as the pellets begin to fill the cooler, the weight of the pellets opens the hinged louvers one at a time. This permits air to pass through that section of the cooler where pellets are contained. The automatic louver type of cooler is particularly effective in cold climates where the pelleting process is started and stopped several times a day during formula changes. It further reduces the amount of down-time between runs because the cooler does not have to be filled before maximum cooling can be achieved.

A feed manufacturer who installed automatic louvers on his existing coolers with rigid louvers reduced down-time between changing formulas to 2½ to 3 min. This is done by allowing the cooler to empty down to within approximately 2 ft. of the bottom just prior to the emptying of the mash bin over the pellet mills. Then, when the mash bin has been emptied, it is a matter of only 2½ to 3 min. before they have totally emptied the cooler and started up on the next formula.

When the required increase in production is small (for example, less than 4 tons per hour), another type of cooler may be considered. This is the rotary vertical cooler, a cylindrical rotating type vertical cooler combining the operational features of a vertical cooler with the pneumatic conveying device. Pellets are picked up under the pellet mill by means of a vacuum conveying system. The necessary suction is provided by the cooler fan which places the cooler under vacuum and causes a vacuum to be formed in the conveying line. The pellets enter the rotary cooler through the side of the cylindrical housing. Use of this type of cooler eliminates the need for any type of materials handling equipment from the pellet mill to the cooler, and it permits the cooler fan to be used to convey fines back to the use bin.

CONCLUSION—The dairy industry is very definitely in a period of marked transition. Dairy farming is gradually losing its identity as a way of life and is changing to dairy farming as a way of business. Production efficiency achieved through improved feeding and breeding practices, combined with striking technological developments in the mechanics of dairy farm operation, gives stability and optimism to today's dairy farm operation industry. The future success of the individual dairyman and the dairy industry necessarily depends on the rigid application of practices of proven value and a realistic development of new knowledge. These changes in the dairy industry which include the increased use of pelleted rations for dairy cows are very definitely affecting the feed manufacturers. The feed manufacturer should be prepared to gear up his production facilities to meet this new demand and to open new markets in this promising field.

v v

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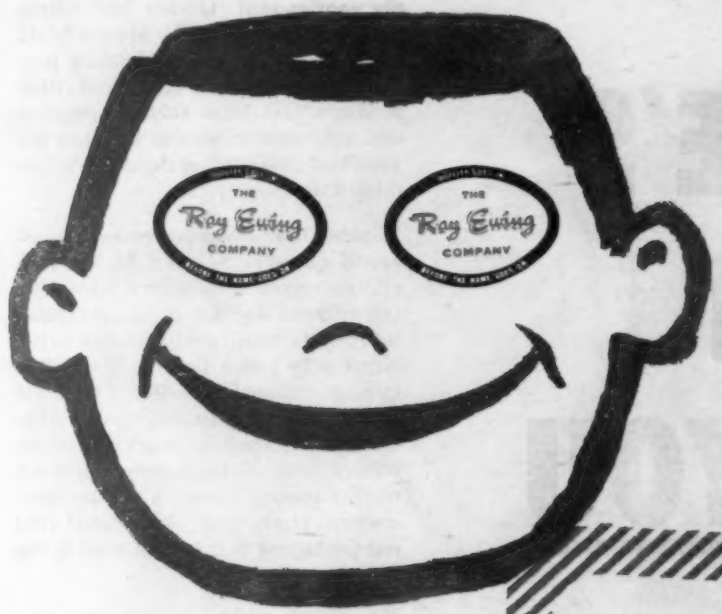
MILL OPEN HOUSE

CADDOTT, WIS.—Open house was held recently at the Farmers Union Co-Op Feed Mill here, according to Jack Marion, manager of the mill. Work on the installation of the new facilities was completed just recently.



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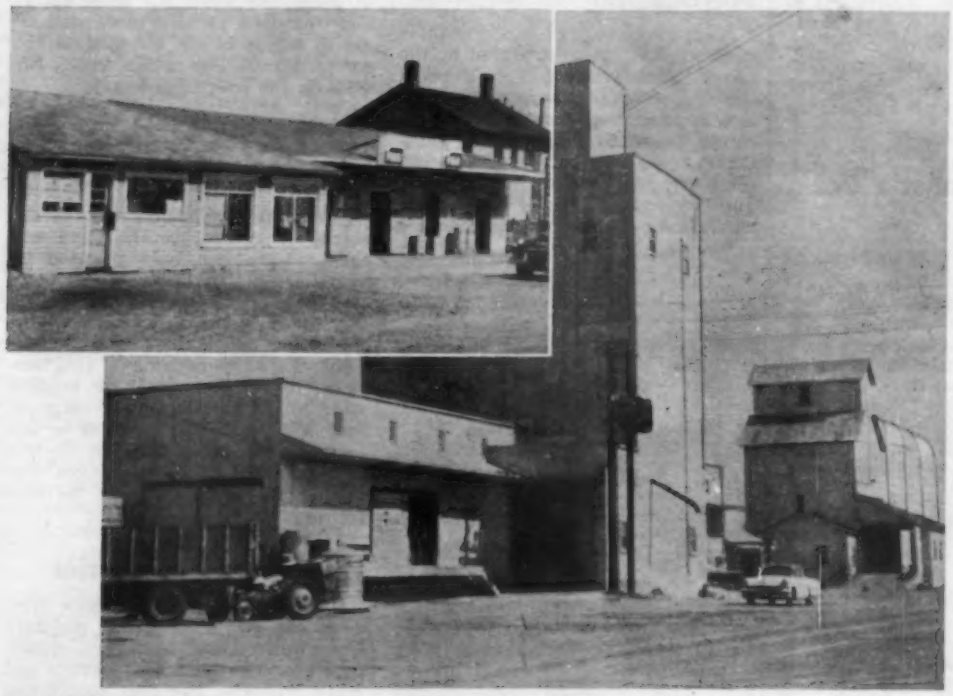
SOLD 50 TONS of ScotchOLass in first seven months



Farmer's Co-operative Exchange
Egan, South Dakota

O'Dean Brender, Manager

ScotchOLass IS EASY & PROFITABLE TO SELL

"I started selling Scotch O Lass in October, 1958, and I sold 50 tons the first 7 months. I like to sell Scotch O Lass because of its excellent consumer acceptance. It mixes in feeds very well and doesn't harden in storage. I have never had a complaint from my customers with this product and I like the profit."

DRY, SWEET, UNIFORM SCOTCH O LASS will make your branded feeds and custom mixes more palatable, more nutritious.

Gary Olson, Feedmill Operator, F.C.E.

Vy Lactos LABORATORIES, INC.

1901 East Euclid Avenue Des Moines 13, Iowa

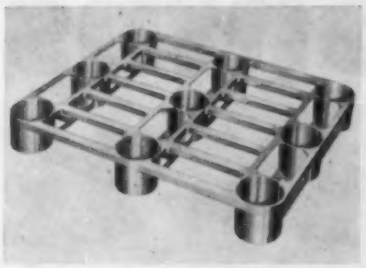
WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7735—Material Handling Pallet

Mag-Craft Corp. has announced production of a magnesium material handling pallet. Considerable weight reduction and increased load capacities, in addition to better handling ease, are features, the company says.



Other features, according to company literature, include consistent weight and size, reduced load damage, four way entry, ease of storage and personnel safety. The pallet is available in a variety of sizes. For details, check No. 7735 on the coupon and mail.

No. 7731—Vibration Inducer Catalog

Martin Engineering Co., announces a 38-page catalog which provides engineering data, specifications and a price list on the "Vibrolator" line of vibration inducers. It lists 52 sizes and types from the BD-10 (4½ oz.) to the 3,000 lb. impact CCVP series hopper car shaker (72 lb.). Included in the catalog is an instruction sheet on the CCVP series, illustrating how motor can be replaced in three minutes or changed from air to electric or hydraulic power source. Also shown is a forced air cooler "Motomagnetic" electric vibrator of adjustable frequency for use where difficult ambients are a problem. For copies, check No. 7731 on the coupon and mail.

No. 7730—Bulletin on Switches

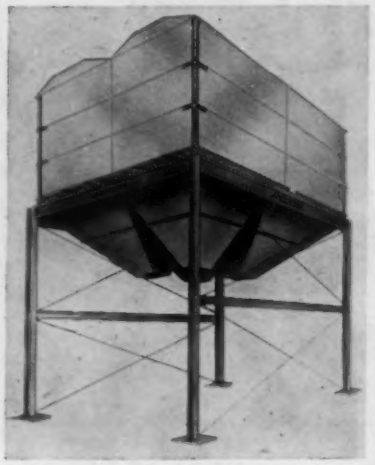
Stephens-Adamson Manufacturing Co. announces the availability of Bulletin 159 on "Tellevel" bin control switches. The literature contains technical and engineering data, specifications, diagrams and illustrations on the normal duty explosion proof and heavy duty Tellevels. Copies of the bulletin can be obtained by checking No. 7730 on the coupon and mailing to this publication.

No. 7732—Mental Ability Test

A general mental ability test, designed to give personnel administrators a quick, economical and scientifically reliable indication of mental ability as an aid in hiring, placing and promotion, has been announced by Aptitests. The test is part of a series of eight Aptitests which measure intelligence, personality traits and specific job aptitudes and abilities. The test is a relatively short-time test. Complete information on the general mental ability test, and on the series of Aptitests is available by checking No. 7732 on the coupon and mailing to this publication.

No. 7726—32-Ton Storage Bin

A bin for storage of hard-to-handle materials has been introduced by the Leach Manufacturing Co. The bin cluster holding approximately 32 tons is formed of four hoppers with corner draw and 60° minimum pitch. Common wall partitions create four compartments holding 8 tons each. The hopper bases are 14 gauge steel, all welded construction, and the sides



and partitions are of 16 gauge galvanized steel. It is 12 ft. square and is designed for a bulk load-out station for mills which do not require too much finished feed storage, the company says. The center arrangement makes it easy to use a weigh hopper, company literature says. For details check No. 7726 on the coupon and mail.

No. 7725—Window Literature

Libbey-Owens-Ford Glass Co. announces the availability of three publications discussing the use of the company's Thermopane windows in poultry, pig and dairy houses. Titles of the publications include "Profits in Poultry Land (or through the chicken house windows)," "From Cradle to Gravy (The profit story of

solar hog housing)" and "This is the House that Jack Built." The booklets are illustrated with cartoon drawings, installation photographs and explanatory drawings. For copies of the booklets, check No. 7725 on the coupon and mail.

No. 7728—Silage Preservative

"Silose," a prefermented sugar preservative for silage, has been announced by Northern Biochemical Corp. The product has the action of multiple balanced plant enzymes on the material being ensiled, the company says, and leaves the silage with a pleasant aroma and appetizing flavor. Advantages, according to the company, are that by adding the material at the outset instead of allowing unfavorable organisms to develop until the preservative is developed in the silage itself, much improved silage will result. The same material will stimulate the growth of yeast and allow the more favorable reactions to take place without the ill effects by the old method, the company says. For details, check No. 7728 on the coupon and mail.

No. 7727—Poultry Wormer

"Trimintic," a poultry wormer designed to control cecal, round and tape worms, has been released by Specifide, Inc. It is for use in poultry feeds at a level of 20 lb. per ton, the company says, and contains piperazine, phenothiazine and 2,2'-dichlorodiphenylmethane (DiPhenthane 70). One pound of the product when mixed with 100 lb. of complete feed will worm 500 chickens or 250 turkeys, the company says. It will be available in 20 lb. packages. For details, check No. 7727 on the coupon and mail.

No. 7729—New Drier

Finco, Inc., announces a new drier designed for removal of moisture from farm crops, fertilizers, chemicals, charcoal, seed, feed, pellets and other products. The heat source can be electrical or steam. Temperature controls permit all types of heat ranges, the company says. The unit's revolving cylinder causes the product to be dried to fall uniformly through a curtain of air that as-

Send me information on the items marked:

- ☐ No. 7725—Window Literature
- ☐ No. 7726—32-Ton Storage Bin
- ☐ No. 7727—Poultry Wormer
- ☐ No. 7728—Silage Preservative
- ☐ No. 7729—New Drier
- ☐ No. 7730—Bulletin on Switches
- ☐ No. 7731—Vibration Inducer Catalog
- ☐ No. 7732—Mental Ability Test
- ☐ No. 7733—Hopper Brochure
- ☐ No. 7734—Vitamin K Premix
- ☐ No. 7735—Material Handling Pallet

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Others (list numbers) .....

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COMPANY .....

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CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

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- Bran
- Shorts
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- Defluorinated Phosphate
- Feed Supplement Urea
- Dried Skim Milk
- Dried Buttermilk

DANNEN

DANNEN MILLS, INC.

Grain and Jobbing Division
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Phone: Adams 3-6161

sures a consistency of drying, company literature said. The variable air flow volume from 4,000 to 30,000 CFM, combined with variable speed control of the revolving cylinder, permits the unit to be specially set to handle a wide range of capacities, as well as different types of material requiring specific drying temperatures. For information, check No. 7729 on the coupon and mail.

No. 7733—Hopper Brochure

A four page, two color brochure (Bulletin No. 265) describing advantages of self-dumping steel hoppers for bulk material handling is available from Roura Iron Works, Inc. Fourteen photographs illustrate how hoppers will handle soybean meal, foods, aggregates and other bulk materials. Illustrations show how hoppers are mounted on casters or skids for handling by fork truck, and full specifications of nine sizes available are listed. For copies, check No. 7733 on the coupon and mail.

No. 7734—Vitamin K Premix

A new vitamin K premix, described as "extremely stable," has been announced by the Heterochemical Corp. The new product, called "New Process Hetrogen K Premix," is said to assure stability under the most adverse conditions of temperature and humidity. The company said that under normal storage conditions and also in accelerated storage tests at higher temperatures and humidities, New Process Hetrogen K Premix retained 98% of its original potency. The new premixes are available in a range of graduated potencies of from 4 to 64 grams of Hetrogen K per pound on calcite or soybean meal carriers. For more information about the premix, check No. 7734 on the coupon and mail to this publication.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7703 — Bulk delivery unit, Knoedler Manufacturers.

No. 7704—Bulk feed tank, Butler Manufacturing Co.

No. 7705—Corn sheller, Bryant Engineering Co.

No. 7706—Hog equipment folder, Brower Manufacturing Co.

No. 7707 — Injectable iron promotion, American Cyanamid Co.

No. 7708—Folder on feeders, Jacobson Machine Works, Inc.

No. 7709—Discharge collector, Sprout, Waldron & Co., Inc.

No. 7710—Laryngotracheitis vaccine, American Scientific Laboratories, Inc.

No. 7711—Belt weigher bulletin, B-I-F Industries.

No. 7712—Coccidiosis vaccine, Dorn & Mitchell Laboratories.

No. 7713—Bulk truck body, Productive Acres Manufacturing Co.

No. 7714—Belt cleaner, Stephens-Adamson Manufacturing Co.

No. 7715—Egg cleaning compound, Anderson Box Co.

No. 7716—3-way vaccine, Jensen-Salsbery Laboratories, Inc.

No. 7717—All bulk transport, Henderson Manufacturing Co.

No. 7718 — Calf scour treatment, Hess & Clark.

No. 7719 — Bag closing machine, Crown Zellerbach Corp.

No. 7720—Roller mill steamer, Roskamp Huller Manufacturing Co., Inc.

No. 7721—Bulk hog feeder, Pannier Bulk Feeder, Inc.

No. 7722—Hog farrowing stall, Mahaska Industries, Inc.

No. 7723 — Spot removal unit, George A. Rolfes Co.

No. 7724—Counter bulletin, Richardson Scale Co.

LABEL YOUR FEEDS:
"LABORATORY CONTROLLED" . . .
Quality control doesn't cost—it pays! Find out how this accurate, economical service can increase your feed sales.
WILHOIT LABORATORY Flour Exchange Minneapolis 15
Serving the Feed Industry Since 1915

"Our new STRONG-SCOTT equipment makes operating much easier and faster."

Strong Scott

says Carl Smith, Manager of Farmers Co-op Grain & Stock Company, LeRoy, Minnesota.

A remote control for each of the five quick-change screens gives Carl Kempe, operator, immediate selection of grinding size without shutting down the Hammermill between grinds.

Two Strong-Scott TRIPLE ACTION MIXERS provide fast, efficient batch mixing with added molasses when required.

AUTOMATION? "You bet," says Carl Smith, Manager of the Farmers Co-op Grain & Stock Company of LeRoy, Minnesota. "Where we used to have five men to do the work, we now need only one man and can triple our output."

"With the Strong-Scott quick-change Hammermill we have as many as five different grinds in process without shutting down the Hammermill," said Smith. "The farmers really like this because in busy times they used to wait as long as five or six hours for processing and now 20 to 25 minutes is as long as anyone has to wait."

The new addition to the Farmers Co-op Grain & Stock Company at LeRoy, Minnesota, built by **VOLDEN CONSTRUCTION**, Henning, Minnesota, has been in operation only a few months and already the Strong-Scott Hammermill and two Triple Action Mixers have proven they will quickly pay for themselves. "On a normal grind, we turn out two ton in about eight minutes and can then mix two ton thoroughly in three to five minutes in one of our Triple Action Mixers," says Carl. "On a fine grind, which is our 8/64 screen," added Smith, "we grind five ton an hour."

Additional Strong-Scott equipment in use includes legs, drag, crusher, baggers, and a molasses handling system. "A big plus for us is the fine service we get from the Strong-Scott Company," Smith concluded.

EQUIPMENT DESIGNED FOR BETTER PROCESSING

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Please send me complete information on the Strong-Scott . . .
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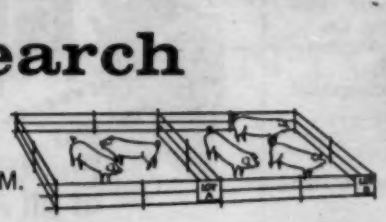
BY SPENCER H. MORRISON, PH.D., D. V. M.

Comments and Observations from Cornell Nutrition Conference, Nov. 11-13.

Although the various papers presented at the Cornell Nutrition Conference were discussed in some detail in the regular news section of Feedstuffs starting on page 10 of the Nov. 14 issue, certain comments made by some of the speakers during the discussion periods are worthy of note:

Hjalmar Claussen, State Animal Husbandry Experiment Station, Denmark—Stated that when protein level of pig rations is already high, increasing the level over these amounts will not increase the meatiness of pigs. However, if one starts out at the low end of the scale and adds potein, up to a certain level, it will increase the meatiness of hogs. This fact probably accounts for the reason that most Danish work shows an effect for added protein, while most U.S. work shows little effect on carcass meatiness with additional protein, with certain minor exceptions. The inference here is that in the U.S. we are not only feeding our hogs too much energy, ad lib, but, also probably, too much protein on occasion. This speaker also emphasized that to produce quality carcasses according to Danish requirements, hand feeding on a limited basis is a must; even limited free-choice rations furnishing like amounts of nutrients are not satisfactory.

He also made the very interesting point that although much work has been done both in England and America on the amino acid requirements for feed conversion and growth, little has yet been accomplished on the amino acid requirements necessary to produce the meaty hog. A very pertinent point, in my opinion!

Using purified diets based on casein in three different experiments, growth was improved, but carcass quality was lowered because the pigs were too fat—this in comparison with skim milk barley type basal diets.

Prof. Claussen also noted that if we increase methionine and lysine up to a certain point, we will get leaner pigs, but if increased beyond this point, the pigs become fatter.

Protein content of the milking sows determines how fat the pig will be on an ad lib system of feeding. If pigs started well, then stunted in growth due to restriction of feed or other causes later, they will get fatter when placed on ad lib feeding than normal pigs. This principle is not new as it was demonstrated by McMeekan many years ago (1940).

G. Matrone, North Carolina State College—One of the most interesting and far reaching papers of the conference in the opinion of many. Dr. Matrone reported the development of **completely synthetic** rations which are able to give lamb gains of approximately 4/10 lb. daily over a 30-week period! The development of these diets depends upon furnishing to the ruminant sufficient Na and K cations in the form of bicarbonates

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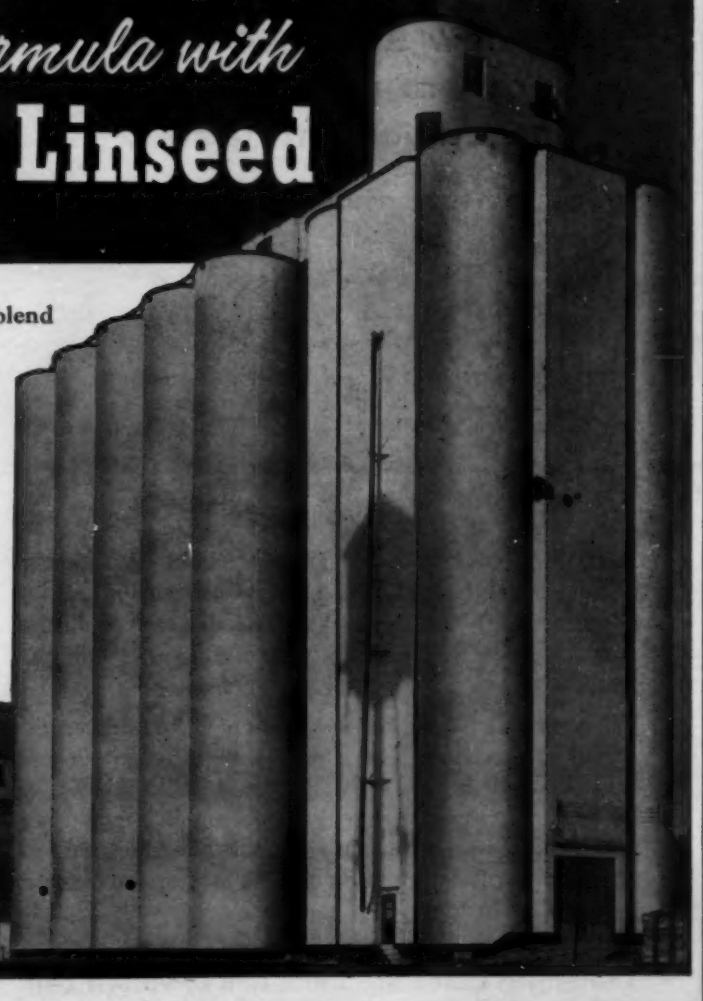
Minnesota Linseed



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and is probably associated with the buffering capacity of the rumen.

It is interesting to note that when such "non-roughage" diets are fed, the amount of saliva secreted is greatly reduced. It has been previously noticed by many workers that saliva flow is increased on roughage diets and obviously the saliva furnishes much of the buffering materials to the rumen, and keeps the right physiological conditions in the rumen. This paper is so important because it enables us to now explore the actual requirements of ruminants in terms of purified diets with some degree of exactitude. It is also interesting to note that apparently ruminants do not actually "require" roughage in their diet; this certainly upsets many of the textbook statements of the present time!

The role of the Na and K cations according to Matrone is:

(1) Buffer ruminal volatile fatty acids.

(2) Transport ruminal volatile fatty acids across the ruminal wall.

(3) Shift ruminal fermentation from the "normal" acetic end products to the propionic side.

It is also very important to note that confirmation of this work has been secured in both rabbits and sheep at the USDA nutrition laboratory at Ithaca, N.Y. Workers of this group also feel that not only are the Na and K cations very important considerations in the development of such purified rations, but that also the carbonate radical is fully as important.

John Matthysse, Cornell—Dr. Matthysse gave a very interesting and informative discussion on the use of systemic insecticides included in the feed. However, to me the most interesting remark made by him was in relation to the cranberry industry and its troubles with the FDA. This ban was "making an asinine mountain out of a molehill" in his opinion. Just one man's opinion, but nevertheless, a trained and dedicated entomologist and well qualified to know the facts of the cases.

Morley Kare, Cornell—Brought out during his talk that sugar was directly absorbed from the crop of the chicken—he has conclusive experiments to demonstrate this point. Previously, we have considered that little or no absorption of materials takes place here. His studies on flavor to restrict feed intakes may have application with so-called "restricted feeding" programs and will be published shortly in the Poultry Science Journal—watch for them!

S. Slack, Cornell — Stated that grain feeding can be closely calculated by means of electronic computers from DHIA barn book information. It was mentioned that the Morrison Feeding Standards were being used as a basis for making recommendations. Close inspection of the figures, however, shows that this is not actually the case. Certain adjustments are made in protein requirements, and the latest revisions of TDN requirements of the Morrison Feeding Standards (1959) are not being followed. The resulting calculations will, therefore, tend to be somewhat high in many cases and farmers will be recommended more grain than needed if good management is followed. In actual extension practices, this may be a good policy since many farmers are not good operators—but it does point out the important fact to realize that even such college figures may need to be tempered according to actual conditions and not blindly followed!

Milton Scott, Cornell — Answered several questions from the audience in the question and answer box:

(a) In his opinion, niacin and nicotinamide are equal for supplementing poultry rations, etc., on a mole for mole basis.

(b) His view is that the use of vitamin C is still up in the air for poultry rations. Work at Cornell with growing chickens has consistently shown no response for C additions.

(c) This spring an experiment with radio calcium demonstrated increased blood calcium levels with vitamin C in the diet.

(d) In answer to the question, "Is all **trans** vitamin A best for chickens?" No, with certain qualifications. More conclusive work remains to be done.

After vitamin A is absorbed, the trans form is deposited in the liver at a higher level, but some of it is converted to **cis** form. Some **cis** may be needed to supply needs for this form. The question is still way up in the air, but the people who have done the work are to be congratulated for doing the work and calling attention to the need for still more research.

There is a possibility that all **trans** is superior—but yet to be proved.

(e) At 18-24 weeks the calcium and phosphorus requirements are probably quite low, but we have no work to fix levels accurately for this age for turkeys. We may not need additive sources of calcium and phosphorus at this age with certain rations.

Charles Durbin, Food and Drug Administration, Washington—Besides his statement made in his prepared speech, the answers to certain questions from the audience were interesting and reflect the "get tough" attitude of this division of the government.

If products or materials added to feeds, or drugs used for treatment or prevention of animal diseases produce allergic reactions in humans—as in the case of penicillin contamination in milk resulting from mastitis treatment—the FDA will "try everything in our power to get them out of the supply."

With respect to the use of dienestrol diacetate in the feed of chickens, the remark was made that although such use, if previously cleared, is now o.k., it is a "temporary thing and we may change tomorrow."

In response to a question from the floor, "Why not ban all tobacco products?" Dr. Durbin said, "If Congress passed such a law, we would enforce it."

You save his pigs (and keep his business) when you deliver nf-180 scours control within hours

That's Russ McKarns, a typical hog feed customer, in the photo. When a scours epidemic hit his 600 feeder pigs, Russ wanted help. Not next week. Right now! So he called his feed company.

Next morning he was feeding a test group of scouring pigs a medicated ration containing 6 lbs. of nf-180 per ton.

"They showed improvement right away," says McKarns. "Within a week they were just about normal. At market they weighed just as much as the hogs that weren't sick at all. But the sick pigs I had on the other treatment (not nf-180) kept on showing symptoms from time to time and never did gain right. This nf-180 can keep you in the hog business even if your place is badly infected with scours. We've got a lot invested here and we've got to make a go of the hog business."

Unusual luck? Not at all. One commercial feed company ran more than two dozen field trials, using nf-180 for scours control. In each test, scouring decreased in 24-48 hours . . . almost stopped within 72 hours. Conclusion:

nf-180 at the 6-lb.-per-ton level... used according to directions (fed for 14 days) and with good management... is a practical method for control of enteritis in hog production.

Certainly, there are a number of products used for scours control. They vary in effectiveness. But for swift, effective control of necrotic enteritis and vibrionic dysentery, your best bet is nf-180... proved in research, field tests, and extensive on-the-farm use.

The feed man who delivers effective scours control within hours after a call for help stands to win lasting customer loyalty. He also builds a solid reputation for service. This, in turn, increases chances of gaining new customers . . . developing new business.

FREE INFORMATION KIT

Be ready to step in when your next call for help comes from a customer with scouring hogs. Have nf-180 on hand. To get more facts on nf-180 scours control, write for a free swine information kit. For fast shipment of nf-180, get in touch with your Hess & Clark representative . . . or call us collect. Hess & Clark, Dept. M-14, Ashland, Ohio.

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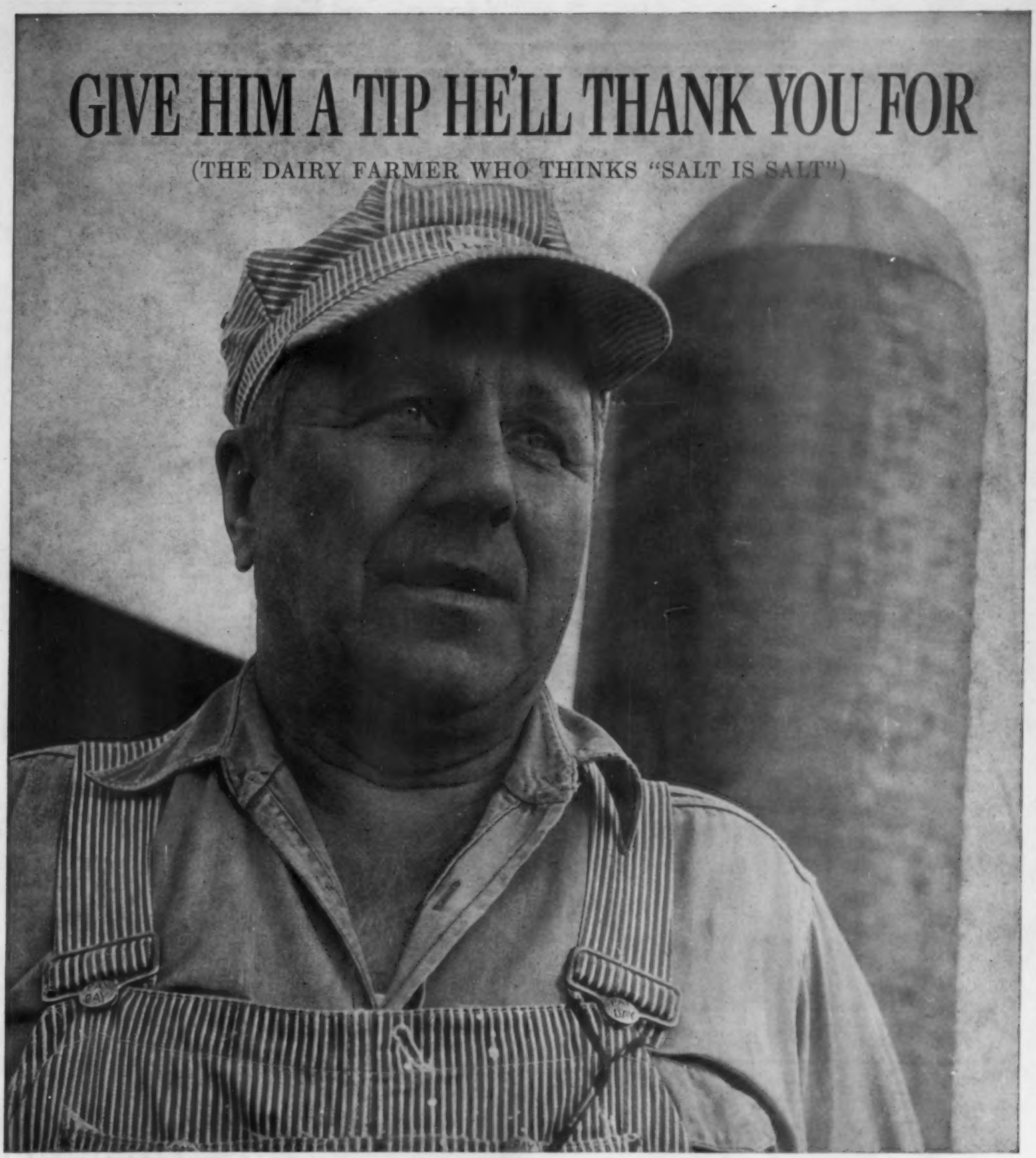
(THE DAIRY FARMER WHO THINKS "SALT IS SALT")



REMIND HIM TO ORDER MORTON T-M SALT. Even though salt is a small part of his feed bill, Morton Trace-Mineralized Salt helps increase feed efficiency so all his feeds do a better job. He'll appreciate your reminding him—and he'll be back regularly to do more business with you. What's more, Morton T-M is a quality product you can recommend with confidence to any dairyman. It is a profitable item backed by strong promotion that helps make it sell easily.

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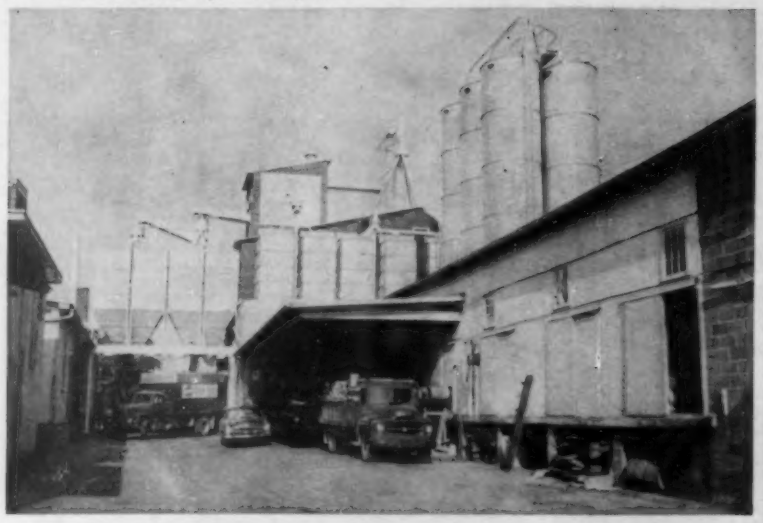

OPEN HOUSE—An open house celebrating the 40th anniversary of Wolgemuth Brothers, Inc., Florin, Pa., was held recently. Shown are part of the firm's feed mill facilities.

Wolgemuth Feed Firm Has 40th Anniversary

FLORIN, PA.—Daniel M. Wolgemuth, president, Wolgemuth Brothers, Inc., feed mill in Florin, greeted some 800 friends and neighbors who attended open house at the mill recently to help him celebrate the 40th anniversary of the business he began in 1919.

Mr. Wolgemuth started in the feed business with a total working force of himself and two employees. Transportation was provided by two horses and one wagon. The company now employs 27 persons and utilizes 12 vehicles.

Mr. Wolgemuth is assisted by his sons, Jay and Donald, who carry most of the load of operating the newly installed push button mill and bulk handling equipment.

With much of the volume in poultry feeds, the mill has storage facilities for 850 tons of bulk feed and more storage for feed in bags.

SPREAD BETWEEN SOY MEALS NARROWS

WASHINGTON—The price spread between 44 and 50% soybean meal is narrowing, according to a U.S. Department of Agriculture report.

Soybean meal of 50% protein content has been growing in importance in recent years, the report notes. Because of its low-fiber and high-protein content, it has become an important protein feed in broiler rations.

During the period 1955-56 to 1958-59, 50% solvent soybean meal has averaged about $7.30 per ton higher than 44% solvent meal at Decatur, bulk, unrestricted basis. This difference narrowed from $8.30 per ton in 1955-56 to $5.80 in 1958-59.

Some of this decline in the price spread probably reflects increasing production of 50% meal and increasing efficiency of producing the higher protein meal, permitting lower cost in processing, USDA said.

Says GMI Egg Plant To Boost Economy

BILOXI, MISS.—J. C. Feldman, district manager of General Mills, Inc., told members of the Mississippi Poultry Improvement Assn. in convention recently that the production of quality eggs will become a "tremendous economic factor" in the Jackson area.

The establishment of a large processing plant in Jackson by General Mills and the program being put into effect will, said Mr. Feldman, "provide economic stability in the area . . . with a $1 million payroll when the program reaches its objective."

Mr. Feldman said his company worked closely with the farmers under contract thus assuring a steady supply of top quality eggs. He noted that 130 farm families were involved in the program, all located within a radius of 50 miles of Jackson. "These families will receive $690,000 giving them an average additional per family income of $5,300," Mr. Feldman explained.

He said the plant and office staff will be composed of approximately 75 persons with an approximate $200,000 payroll. "For every 75 jobs created by a new plant, 56 other jobs come into being for a total of 131 jobs from just one new industry. These support 222 more people. The community is increased by 84 new households and 80 more automobiles. Three more retail establishments open. Personal income goes up $42,500. Retail sales are increased $345,000 and $202,500 is deposited in banks to become investment life blood for other ventures and economic stimulants," he stated.

From the research laboratory

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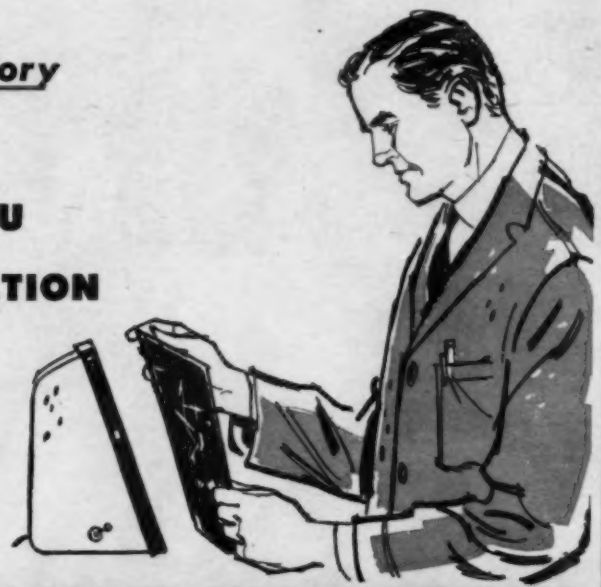
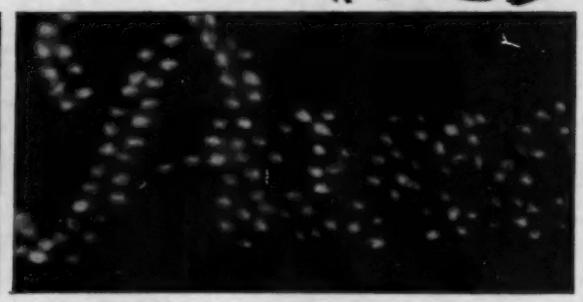
Panogen® GIVES YOU
POSITIVE SEED PROTECTION

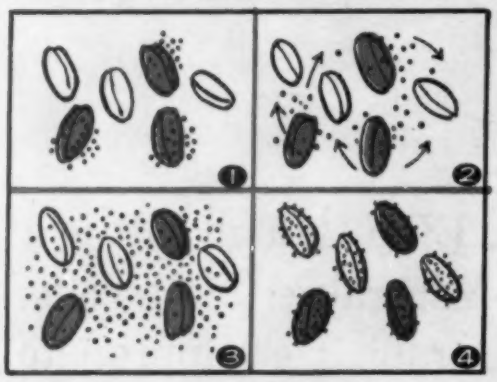
This striking method of photographing the actual vapor action of Panogen was developed by Swedish scientist Dr. Olle Lindstrom. He compounded a special radioactive Panogen, which was then applied to seed. This seed was then placed on a photographic plate, with the result that the Panogen vapors actually photographed themselves. No other light source was used.





The photo, upper left, shows the effect of Panogen vapors at the time of application. The vapors are already beginning to cover every kernel of seed.
In the photo above, you see the seed a few hours later. Note how a protective film of disease-destroying fungicide now completely covers and protects each kernel of grain.

IT'S THE VAPOR ACTION!



Panel 1. Immediately following treatment: Most seeds show red areas and faint red coloring. The black dots indicate the millions of disease-destroying molecules which cling to each colored seed.

Panel 2. A few minutes after treatment: Vapors are beginning to spread, making contact with adjacent seeds. Note movement of vapors carrying fungicide molecules to seed surfaces that may have originally had less treatment.

Panel 3. A couple of hours after treatment: Vapors from the treated seeds have completely enveloped all seeds. These vapors penetrate every crack and crevice where disease spores may be lodged.

Panel 4. 24 to 48 hours after treatment: Disinfection is complete, thorough, permanent. The vapors carry no red dye, therefore, red coloring may not be visible on all seeds, but each kernel has been completely coated with the Panogen vapor. A chemical binding action locks this protection on every seed.

When you sell or process seed, your reputation is at stake. Thorough protection from disease is *business* protection for you.

Panogen is used by agricultural authorities throughout the world as a standard for testing new seed-treating products. This is your assurance that when you treat with Panogen, you are using the best available fungicide.

For a more detailed description of Panogen's vapor action, write for the free booklet, "The Benefits of a Modern Seed Treatment."

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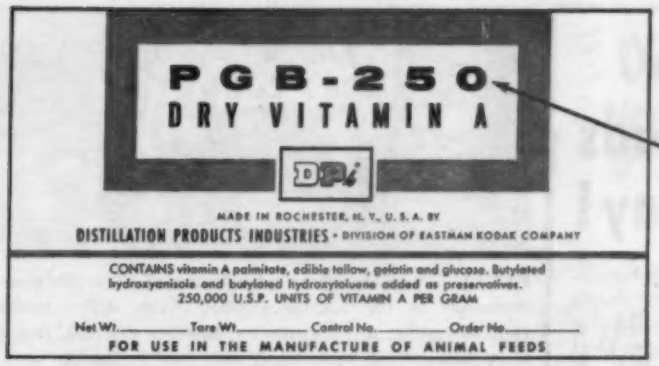
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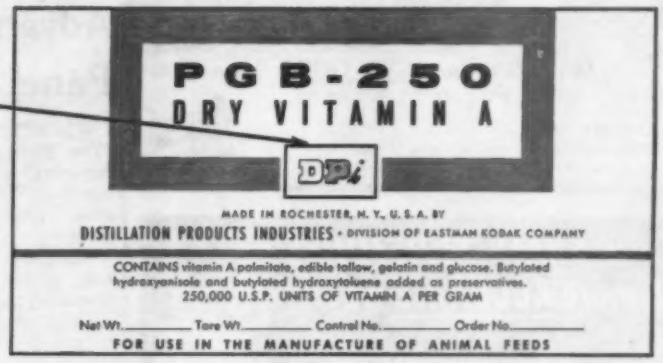
This is the trademark of DPi's dry vitamin A for fortifying feeds, premixes, concentrates, and other products fed to poultry and livestock. It consists of golden orange spherical particles in a size range between 30 and 120 mesh.

DPi has been a primary producer of vitamin A for a long time, was first to synthesize it commercially in this country, produces vitamin A in a modern plant using methods and processes developed in DPi laboratories.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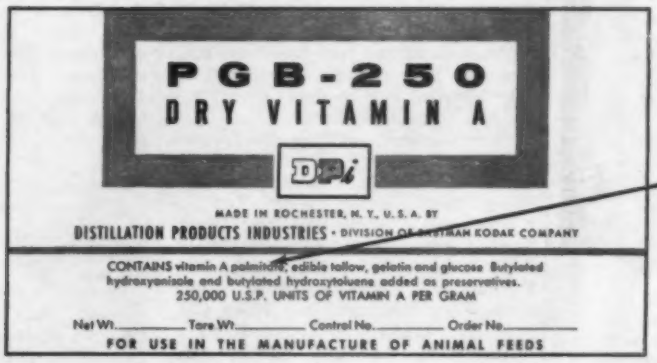
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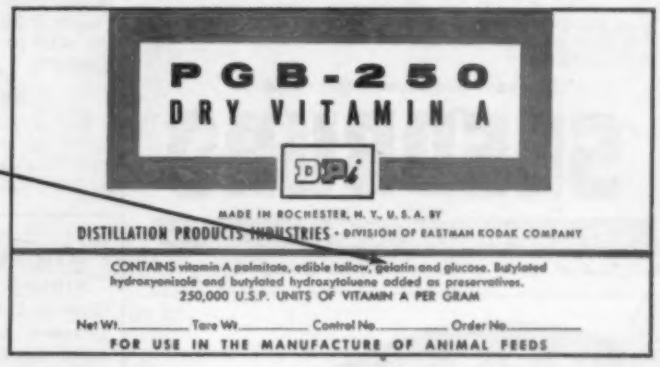
The vitamin A in PGB-250 is protected from air and the destructive action of minerals by the use of fat, gelatin, and edible food-grade antioxidants. Even at 100 F. and 58% relative humidity in mineral pre-mix, PGB-250 has shown a potency loss of only about 1¼% per week.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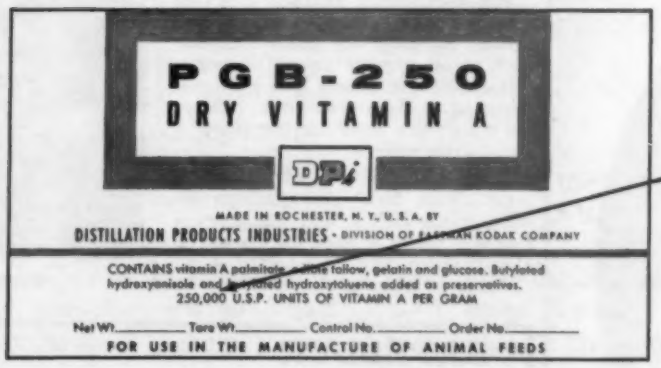
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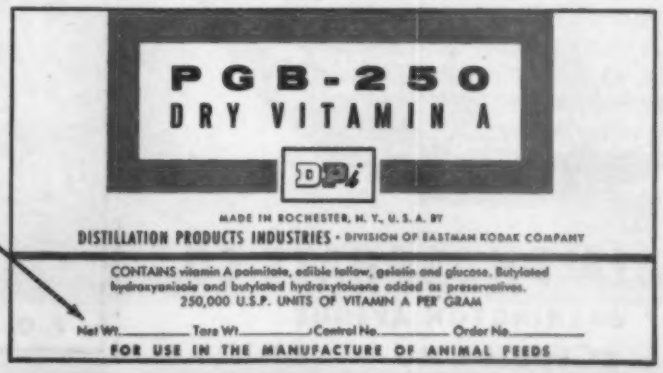
FOR USE IN THE MANUFACTURE OF ANIMAL FEEDS

The vitamin A potency of PGB-250 is 250,000 units per gram. You can also get potencies of 30,000, 20,000, or 10,000 units per gram. The diluent used in these dilutions is solvent-extracted soybean feed of particle size range especially chosen to blend with PGB-250.

PGB-250 Dry Vitamin A is packed in 25-pound and 100-pound polyethylene-lined fibre drums. For further information or a quotation, write ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto. (Also available from distributors throughout the country.)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CONTAINS vitamin A palmitate, edible tallow, gelatin and glucose. Butylated hydroxyanisole and butylated hydroxytoluene added as preservatives.
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FOR USE IN THE MANUFACTURE OF ANIMAL FEEDS

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That's the record-breaking amount of feeds produced **and sold** by Ultra-Lifed independent feed manufacturers this year. ¶Here's one reason why: only Ultra-Life takes that vital EXTRA STEP — helping you to make and SELL better feeds. Why not GET GOIN' this season . . .write, wire or phone now!

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PANEL—Panel members who discussed "The Midwest Will Stay in the Egg Business" at the Kansas Poultry Assn. silver anniversary convention are (left to right): Ray Parmenter, Eustace Coombs, Bob Axelson, Rod Turnbull, Herb Riley, Prof. Tom Avery and Joe Claybaugh.

Advantages of the Midwest Noted by Panel at Kansas Poultry Convention

WICHITA — A panel discussion on "The Midwest Will Stay in the Egg Business" was among the events featured at the Kansas Poultry Assn. silver anniversary convention here recently.

The panel, moderated by Rod Turnbull, editor, Weekly Star Farmer, discussed advantages of the Midwest such as grain, labor and location.

It was stated that at least one producer was producing eggs for 22¢ a dozen on the West Coast, figuring all costs. The panel said the Midwest will have to compete with these costs.

Members of the panel said the college can play an important part to help Midwest egg producers with basic and applied research.

Panel members included the following: Bob Axelson, Professional Feeds; Eustace Coombs, Coombs Poultry Farm, Inc.; Joe Claybaugh, DeKalb Agri. Assn., Sycamore, Ill.; Prof. Tom Avery, poultry department head, Kansas State University; Ray Parmenter, Franklin, Mass., and Herb Riley, KimberChicks, Niles, Cal.

F. W. Budolfson, General Mills, Minneapolis, discussed "What Lies Ahead in Turkey Merchandising." He talked about the many new products that will hit the market and stressed the need for research to expand more products.

Natural Advantage

Ray Parmenter, president, American Poultry & Hatchery Federation, said Kansas has a natural advantage in the Midwest with the source of grains, cheaper land than coastal areas and the family farm labor.

Ralph Thomas, president, Poultry & Egg National Board, said the egg bsiness is a $2 billion industry, but that the industry will have to invest in the promotion of eggs.

Glen Andersen, Chicago Mercantile Exchange, explained that supply and demand are still the determining factors in setting egg prices.

A demonstration on breaking out eggs and measuring eggs by the Haugh unit was presented by Jim Petr, State Board of Agriculture, marketing division, and Dave Bartholomew and Ed Farris, USDA. They also explained the proposed USDA control quality egg grading program.

Officers

Officers elected to the executive committee were Clarence Hoopes, president, Anthony, Kansas, and Ralph Engel, vice president, Hays, Kansas.

Directors elected included the following: Phil Harris, Dodge City; William Carinder, Cherryvale; Gene Lundquist, Hutchinson; L. B. Stants, Abilene; Charles Thurston, Topeka; William Parmely, Kansas City; Edwin Funk, Hillsboro; Ellis Wise, Emporia, and M. E. Jackson, Manhattan.

Firm Awarded $25,031

BIRMINGHAM, ALA. — H. H. Grooms, U.S. district court judge, has awarded judgment of $25,031.95 to American Express Field Warehousing Corp., Anniston, Ala.

The warehousing firm had filed suit against East Alabama Grain Co., Anniston, charging the grain company with using receipts from the warehouse to secure a bank loan and later disposing of the stored grain, leaving the warehouse liable for the debt.

FIRE DESTROYS ELEVATOR

OREGON, MO.—Fire recently destroyed the office and elevator of Coffman Grain & Feed Co. here. The elevator was filled to capacity. A. C. Coffman is owner of the firm.

F. W. Budolfson

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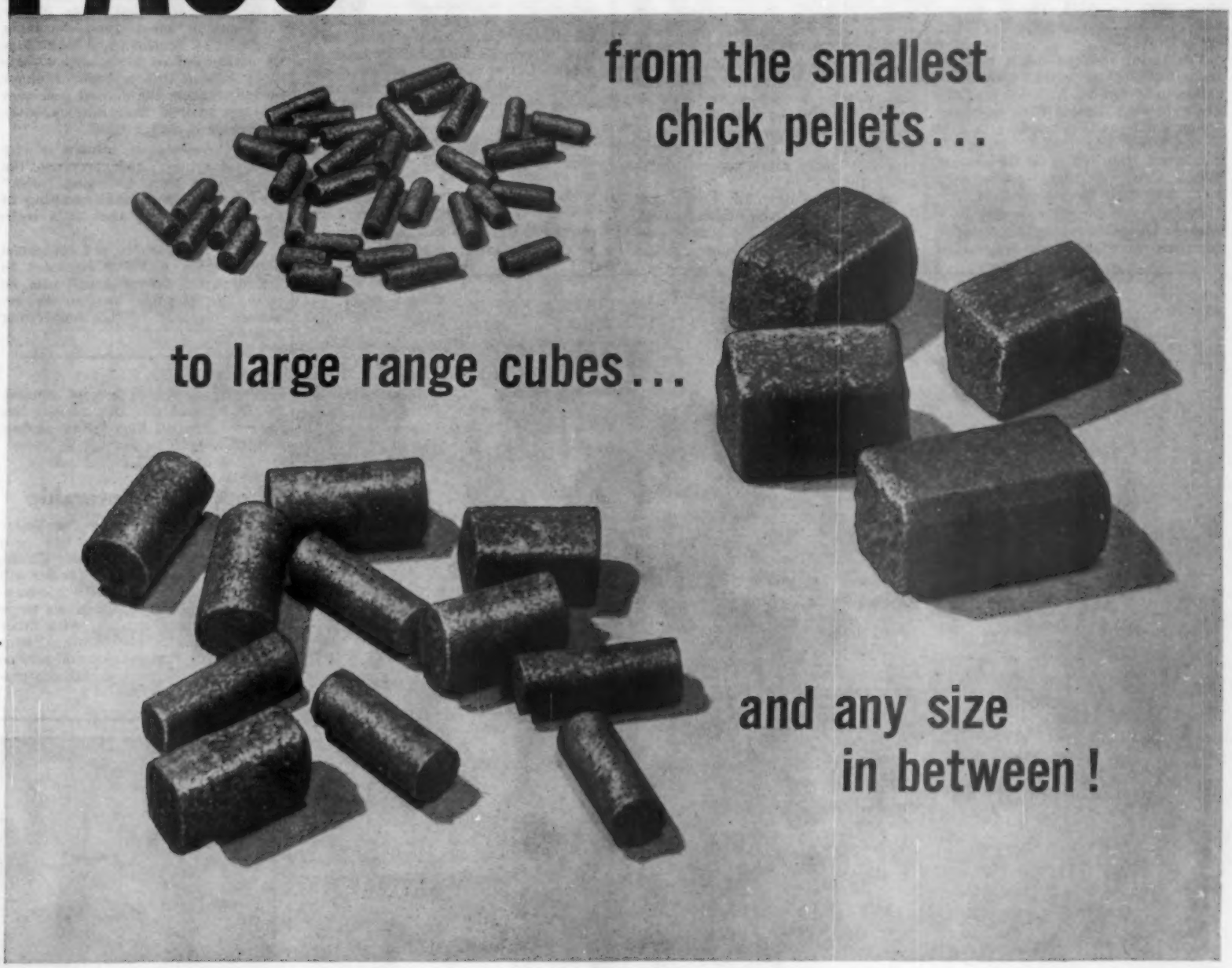

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Cattle Market Moving to West; Iowans Grow Own Feeders, Says Husbandman

AMES, IOWA—Iowa cattlemen are in the midst of one of the country's biggest changes in beef production—with beef markets booming on the West Coast and Iowans nearly doubling their feeder cattle production since 1949, Dr. S. A. Ewing, animal husbandman, said recently at Iowa State University.

The 11 far western states, most of them formerly important sources of cattle to be fed out in Iowa, now are grain feeding almost 80% as many feeder cattle as they produce in that area. When you include slaughter cattle not grain fed, these far western states slaughter more cattle each year than their ranges produce.

Cattle that formerly would have entered the Midwest for finishing on corn are, therefore, being slaughtered in the West—at the rate of almost 5 million head a year, Dr. Ewing said.

Iowa became the nation's leading livestock feeding state because it was located close to markets, had abundant livestock fattening feed and access to feeder livestock on the western plains. The human population shift westward in the past 30 years has made the western states big consumers of finished beef. Irrigation and newly developed varieties of grain sorghum and barley have produced vast amounts of grain for feeding in the West, Dr. Ewing pointed out. The feeder cattle supply was already there.

At the same time, Dr. Ewing said, Iowa cattlemen have taken advantage of modern research that has developed methods for more efficient use of low-cost roughage. This makes it possible to obtain a great deal of nutritional value from such products as cobs and corn stalks, previously regarded as "refuse materials." These new techniques are enabling Iowans to produce their own feeder cattle efficiently, in some cases on farms whose land was once considered too valuable to "waste" on calf production.

It is not logical to assume that a cow herd is adapted to all midwestern farms, Dr. Ewing pointed out. But, in cases where such a herd is practical, the cow can utilize large amounts of low-quality roughages which may not otherwise be used for feed, he said.

The number of beef cows in Iowa increased from 571,000 head in 1949 to around 1 million in 1956. This amounted to an increase of nearly 80% in Iowa's beef cow numbers compared to only about 36% increase in the 11 western states during the same time. It should be kept in mind, Dr. Ewing said, that this increase has occurred consistently during periods of high as well as low cattle prices.

NEW MEAT TENDERIZER UNDERGOING TESTS

BROOKINGS, S.D.—The chemicals of a widely-used commercial household water softener soon may serve another purpose—to tenderize meat without affecting flavor.

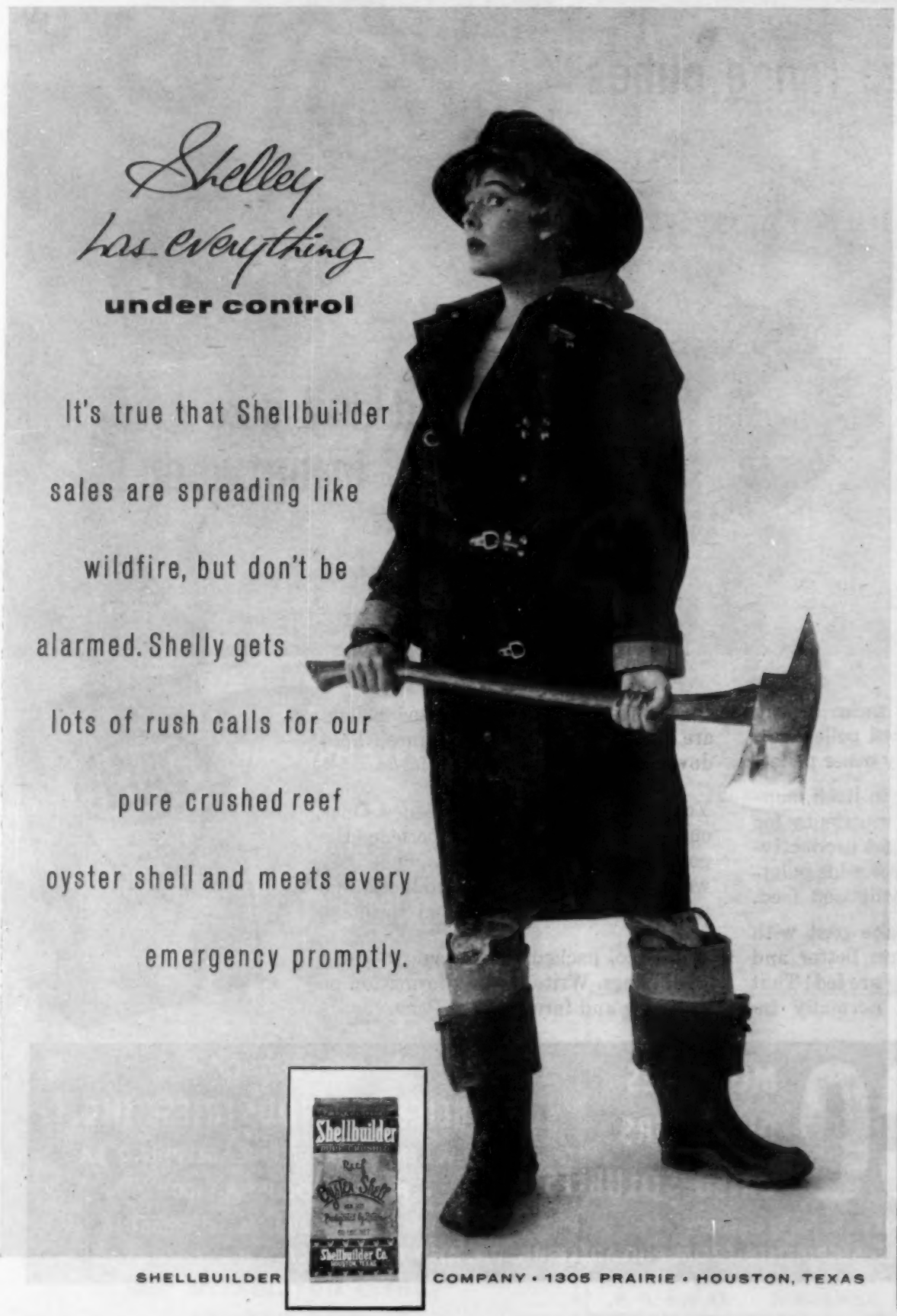
Research at the South Dakota State College agricultural experiment station indicates that these chemicals prevent meat from becoming tough. L. D. Kamstra and R. L. Saffle of the animal husbandry department believe this is brought about by interrupting the normal processes of rigor mortis that develop after an animal is slaughtered.

The chemicals are infused shortly after slaughter. This prevents the meat tissue from becoming "stiff," the researchers reason, resulting in meat as tender as that of a well-aged carcass.

So far the research has concerned hams, but it is being expanded to include beef. Attempts will also be made to determine the muscle reactions involved in this tenderizing process.

Chick Distributorship

WINCHESTER, KY. — The Yeiser Chick Corp., Winchester, has been named distributor of Demler Chicks in the southeastern states. Yeiser will hatch and distribute these commercial egg type chickens from its three hatcheries, plus working with other hatcherymen in the South. Yeiser will be providing a sales and service program to the commercial egg producers.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It's true that Shellbuilder sales are spreading like wildfire, but don't be alarmed. Shelly gets lots of rush calls for our pure crushed reef oyster shell and meets every emergency promptly.
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GIVE HIM A TIP HE'LL THANK YOU FOR

Remind him to order Morton T-M Salt. See page 79.

Another example of how

WIRTHMORE RESEARCH BRINGS YOU BETTER SWINE CONCENTRATES

BACIFERM* (PENICILLIN-ZINC BACITRACIN) COMBINATION IMPROVES WIRTHMORE SWINE FEEDS

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Ask for Wirthmore Pig Zip and Pig 'N Sow in your mixes, and watch how fast your pigs and hogs will grow.

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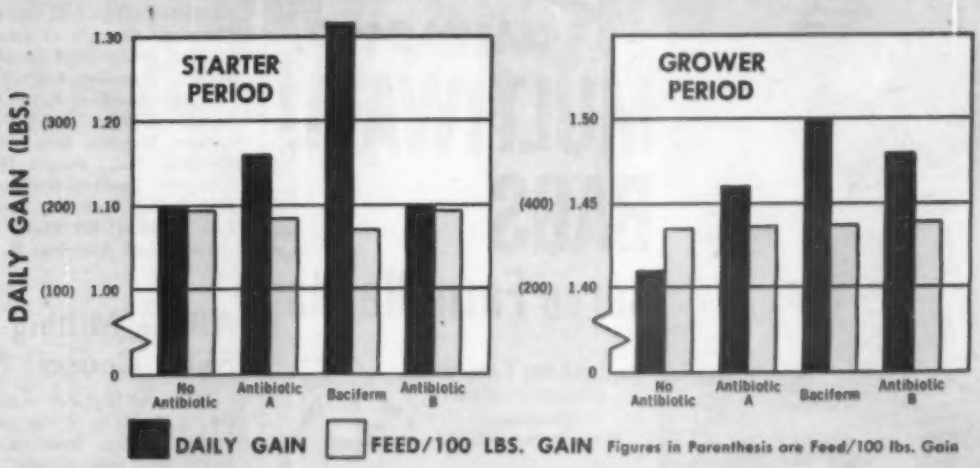

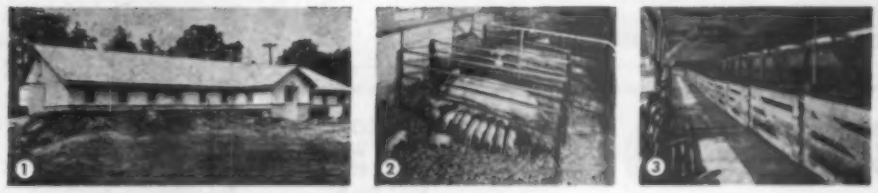

1, 2 — **Wirthmore Swine Research Unit No. 1** The farrowing and weaning unit at the Wirthmore Research Farm is designed to hold 10 sows with their litters and 60-120 weaned pigs in experimental pens. Radiant heating in the floor, removable farrowing crates and germicidal lights are some of the features of this modern unit. The development of improved rations and management practices for both the sow and litter and the weaned pig is the objective of studies conducted in this building.

3 — **Wirthmore Swine Research Unit No. 2** This section houses up to 120 weaned pigs. There are twelve 6' x 9' pens, each holding from 5-10 pigs which have been transferred from the farrowing area. Copper tubing in the floor provides radiant heat. Here and in other swine facilities at the research farm, both feeding and management studies are conducted under controlled conditions. Pigs are transferred to a growing-finishing test house at 10 weeks.

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ALBERS SALES MEETING—These are the men who attended the 1960 Sales Planning Council of the Albers Milling Co. of Los Angeles recently. Those present were (left to right): first row, Robert Bullock, Sanger, Cal.; Ted McGill, Junction City, Ore.; Oliver Oldfield, Modesto, Cal.; George Roblee, Wichita, Kansas; Elmo Long, Fresno, Cal.; Second row, Al Nicoll, Centralia, Wash.; Warren Haile, Sacramento, Cal.; Ray Clarno, Puyallup, Wash.; John Gelder, Dayton, Ore.; Robert Wilkinson, Puyallup, Wash.; William Ingram, Reedley, Cal.; Frank Hanold, Los Angeles; Third row, James Forbes, Los Angeles; Lawrence Sohrweid, Boring, Ore.; Ed Stohlman, Petaluma, Cal.; Ron Baird, Oswego, Ore.; Francis Walter, Modesto, Cal.; Robert D. Moore, Los Angeles; Ed Fields, Fall City, Wash.; Dick Smith, Salem, Ore.; Clarke Nelson, Los Angeles; R. M. Johnson, Los Angeles; Richard Cook, Beaumont, Cal.

Albers Milling Holds Sales Council Meeting

LOS ANGELES — Albers Milling Co., a division of Carnation Co., recently held a meeting of the 1960 Sales Planning Council in Los Angeles.

Salesmen from the Albers plants on the West coast and Kansas City qualified for the council by being top salesmen in the company for a period of four months. Besides winning a trip to the planning council meeting in Los Angeles, each salesman received a $100 gift certificate.

Report on Soybran Flakes Uses Issued

NEW YORK—A report on "Soybran Flakes," a new product made from the soybean's outer coating, has been published by the Chemurgic Digest.

The report tells how the flaking process works and some of the uses of the flakes.

The outer coating is separated from the bean early in the processing, says the report. After separation, the cup-shaped soybean hull with its unbroken surface and hard, shiny appearance is cooked under controlled conditions and flaked at high pressure.

This process completely changes the structure of the hull's three layers—the outer palisade cells, the middle "hour glass" cells and the inner aleurone cells.

The flaking process fractures the outer and inner cells and collapses the middle "hour-glass" cells to provide capillary passage between the fractured surface areas, according to the report.

A patent on this process has been allowed Central Soya Co., Ft. Wayne, Ind., a developer of the product.

According to the magazine, four main uses have been developed thus far for the new Soybran Flakes:

"(1) In complete dairy, beef and sheep feeds, flakes can be added in amounts of 10-25% to add bulk to the ration.

"(2) As a roughage extender, flakes can be mixed with wheat bran, molasses and other similar ingredients.

"(3) As a molasses carrier, flakes, with their high absorption power, permit the adding of 25-30% molasses without difficulty.

"(4) In grass silage, flakes are useful as an additive to absorb more water than any other silage preservative. Also molasses can be added to Soybran Flakes and used as a silage preservative. The molasses provides sugar to promote fermentation, and the flakes provide moisture holding capacity and carbohydrates."

The article lists as features of the flakes high digestibility, high nutritive value, high protein digestibility, greater bulk and high liquid absorption.

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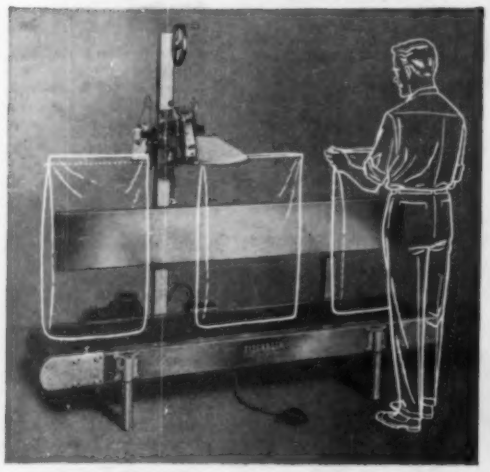

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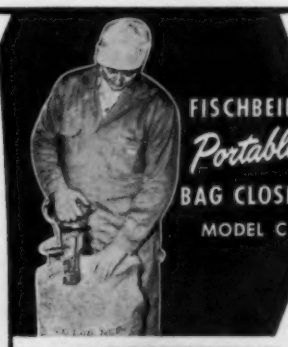

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Dry, free-flowing partially hydrogenated animal fat.

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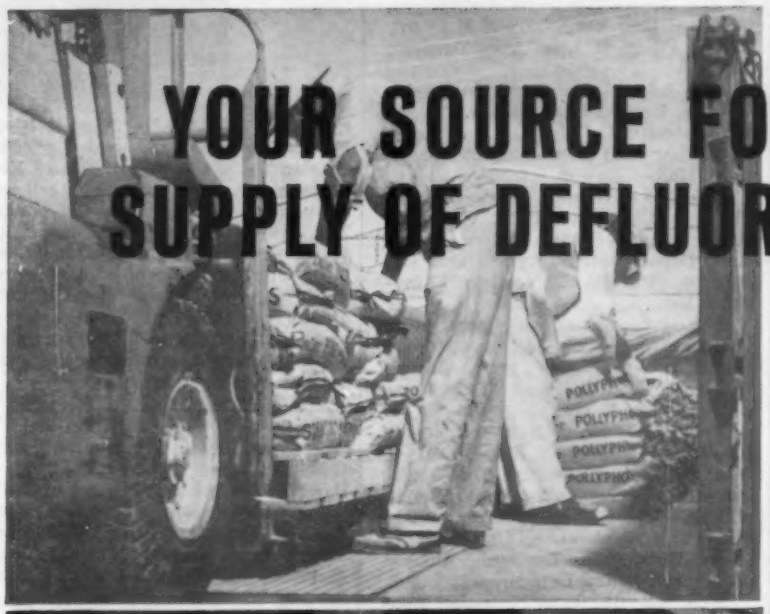

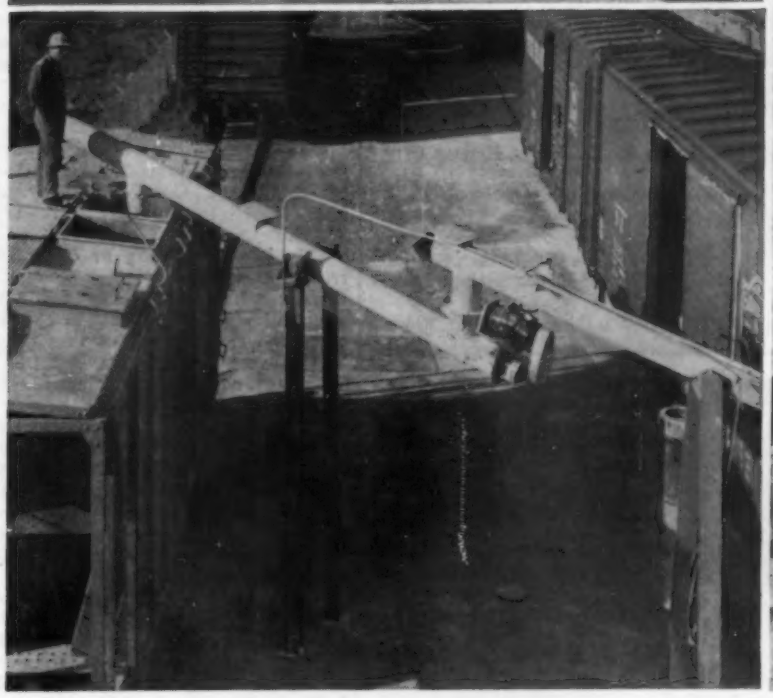

Now, when Mother Nature does not provide the required mineral ingredients for poultry and livestock, the demand for formula feeds greatly increases. Feed and mineral manufacturers look to a dependable source for a supply of proven high quality defluorinated phosphate.

Butler Chemical Company has consistently produced a phosphatic feed supplement of the highest quality . . . POLLYPHOS . . . for the feed and mineral manufacturers the country over.

These same feed and mineral manufacturers can always rely on the uniform high quality of . . . POLLYPHOS . . . its phosphorus content is 19% or above . . . with a minimum of 32% — maximum 35% calcium and no more than .19% fluorine.

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Sales Division: 1230 Esperson Building
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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

● ● ●

1960

Jan. 14—New Jersey Poultry Disease Institute; Rutgers University, New Brunswick, N.J.; R. L. Squibb, chairman, Poultry Science Department.

March 29—New Jersey Poultry Nutrition Institute; Rutgers University, New Brunswick, N.J.; R. L. Squibb, chairman, Poultry Science Department.

Dec. 7—Dairy Study Day; University of Arkansas Agricultural Experiment Station, Fayetteville; Dr. O. T. Stallcup, station dairyman.

Dec. 7-9—Minnesota Poultry Assn., Radisson Hotel, Minneapolis; sec., L. L. Baumgartner, Litchfield, Minn.

Dec. 7-11—Washington State University Stockmen's Short Course, Pullman; chm., Dr. M. E. Ensminger, department of animal science.

Dec. 8-9 — Poultrymen's Service Clinic; Cornell University, Ithaca, N.Y.

Dec. 8-11—Montana Beef Production School; Animal Industry and Range Management Department, Montana State College, Bozeman.

1960

Jan. 4-5 — Kansas Formula Feed Conference; Kansas State University, Manhattan, Kansas.

Jan. 4-8 — Retail Feed Dealers Training School; University of Minnesota, St. Paul; Dr. J. O. Christianson, Director of Agricultural Short Courses, Institute of Agriculture, St. Paul 1.

Jan. 5-7—National Turkey Federation; Hotel Leamington, Minneapolis; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 16—Florida State Poultry Producers Assn.; Angebilt Hotel, Orlando, Fla.

Jan. 17-19—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4, Ind.

Jan. 17-19—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 22-23 — New Mexico Grain & Feed Dealers Assn. Winter Meeting; Cole Hotel, Albuquerque; sec., Parley Jensen, P.O. Box 616, Albuquerque.

Jan. 25-27 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 2-3 — Agricultural Industries Forum; University of Illinois, College of Agriculture, Urbana; Department of Agricultural Economics, 805 Mumford Hall.

Feb. 2-3 — Hoosier Turkey Trot; Spring Mill State Park., Mitchell, Ind.; Indiana State Poultry Assn.; Inc., Department of Agricultural Extension, Purdue University, Lafayette, Ind.

Feb. 2-4 — American Dehydrators Assn.; Broadmoor Hotel, Colorado Springs; exec. vice pres., Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 4-5—Oregon Animal Industry Conference; Oregon State College, Corvallis, Ore.; chm., Dr. J. E. Parker, Poultry Husbandry Department.

Feb. 4-5—New Hampshire Poultry Health Conference; University of New Hampshire, Durham; Richard Warren, Poultry Department.

Feb. 8-9—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 8-9—Midwest Feed Manufacturers Assn.; Muehlebach Hotel, Kansas City; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 10-11—Pacific Northwest Feed Mill Production School; Chinook Hotel, Yakima, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 11—Boston Grain and Flour Exchange Annual Banquet; Sheraton-Plaza Hotel, Boston; chm., Paul Sutliff, 177 Milk St., Boston, Mass.

Feb. 12 — Washington State Feed Assn.; Chinook Hotel, Yakima, Wash.; annual convention; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 12-14—Fact Finding Conference, sponsored by the Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 59 East Madison, Chicago, Ill.

Feb. 21-23 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington, Ohio.

Feb. 23-24—Virginia Feed & Nutrition Conference; Hotel Roanoke, Roanoke; J. Paul Williams, sec., Virginia State Feed Assn., 615 E. Franklin St., Richmond, Va., or Prof. Paul M. Reaves, Department of Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

March 7-8—Grain & Feed Dealers National Assn.; Hotel Muehlebach, Kansas City; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

March 17-18—Oregon Feed & Seed Dealers Assn.; New Sheraton Hotel, Portland, Ore.; mgr., Russ Hays, 702 Lewis Bldg., Portland, Ore.

March 17-18 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Richard D. Creek, University of Maryland, Department of Poultry Husbandry, College Park.

March 23—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

March 23-24—National Broiler Industry Conference; Dinkler-Plaza

PURINA AWARD — The Ralston Purina Co. recently awarded a $500 scholarship to Charles A. Itle of Ebensburg, Pa., senior in dairy science at the Pennsylvania State University. The scholarship was presented by W. H. Searfoss (right) Ralston Purina district manager of Williamsport, Pa. The occasion was Penn State's annual "Ag Hill Party" where scholarships totaling $18,515 were awarded to 90 students in the college of agriculture.

"With our BROWER MIXER we handle any size feed order and get it out ON TIME"

Says J. M. Munguia
J. M. Munguia & Son, Nogales, Arizona

"We use our Brower Mixer to make our own brand of feeds, and estimate 15% gain in feed profits. We also do custom mixing, and the number of customers we serve has increased about 30%. Before we got our Brower Mixer we were unable to handle any large tonnage; now we handle orders of any size and get them out on time. The mixer operation has been very satisfactory — no trouble of any kind. Very economical to operate, it turns out capacity tonnage at a very low power cost."

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- Whirls the ingredients instead of just stirring or tumbling them.
- Produces the most thorough mix obtainable.
- Fast — produces perfect blends in about 10 minutes.
- Economical — power cost only 3¢ to 5¢ a ton.
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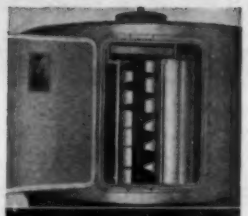
- Heavy welded steel construction — built for years of trouble-free service.



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Glass observation window at eye level provides easy inspection of feed being mixed.

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Vicksburg, Miss. Dalhart, Tex.
Council Bluffs, Iowa

Hotel, Atlanta, Ga.; vice pres., Frank Frazier, P.O. Box 368, Richmond, Va.

March 31-April 2—Pacific Dairy & Poultry Assn. Exposition and Convention; Stardust Hotel, Las Vegas, Nev.; association office, 1304 E. 7th St., Los Angeles 21, Cal.

April 1-2 — Texas Grain & Feed Assn., Shamrock Hotel, Houston; sec., Ray B. Bowden, 407 Fort Worth Club Bldg., Ft. Worth, Texas.

April 5-7—Nebraska Grain & Feed Dealers Assn.; Pershing Municipal Auditorium, Lincoln; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

April 11-13 — Poultry and Egg National Board, LaSalle Hotel, Chicago, Ill.; mgr., Floyd Geil, 8 S. Michigan Ave., Chicago 13, Ill.

April 21-23—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; sec., John Gilmore, Blue Anchor Bldg., 1400 10th St., Sacramento 14, Cal.

April 21-23—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

April 22 — Nebraska Livestock Feeders Day; University of Nebraska, College of Agriculture, Lincoln; chm., Wm. J. Loeffel, Animal Husbandry Dept., Lincoln 3, Neb.

May 1-4—National Fisheries Institute; Hotel Fontainebleau, Miami Beach, Fla.; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

May 9-11 — American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 9-11 — Association of American Feed Control Officials; Sheraton-Blackstone Hotel, Chicago; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

June 13-15 — American Association of Feed Microscopists; San Antonio, Texas; E. E. Brown, Office of State Chemist, Texas Agricultural Experiment Station, College Station.

June 14-15 — Alabama Poultry Industry Assn.; Municipal Auditorium (Exhibits) and Thomas Jefferson Hotel, Birmingham, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

June 14-17—NEPPCO Egg Quality School; Rutgers University, New Brunswick, N.J.; Dr. A. Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

July 23-26 — Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah; sec., Will L. Kinard, Suite 210, 3240 Peachtree Road Bldg., Atlanta 5, Ga.

Sept. 21-23 — Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc.; pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 5-7—Texas Nutrition Conference, Texas A&M College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Nov. 1-3—Illinois Feed Association and Illinois Poultry & Hatchery Federation joint convention; Armory, Springfield, Ill.; sec. IFA, Dean M. Clark, Board of Trade Bldg., Chicago.

CALENDAR FOR 1959-60

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1961

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

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Here's what we are telling your customers about

Dr. Wallis answers your questions about...

vitamin **D** *nutrition*

q: Is there a new recommendation for the amount of vitamin D to be fed for preventing milk fever?

a: Yes, on the basis of recent work, the Ohio Agricultural Experiment Station now recommends 20,000,000 units of vitamin D_2 per day for five to seven days before freshening. This is two-thirds of the previous recommendation. Now milk fever prevention costs even less than before.

q: Can I depend upon good sun-cured hay to supply enough vitamin D for my livestock?

a: Definitely not. Contrary to what is often assumed, the amount of sunshine received in curing does not provide a reliable basis for judging vitamin D content. Some sun-cured hay is even lower in vitamin D than artificially dried hay.

q: I have a herd of good producing dairy cows. How much vitamin D do they need?

a: Experimental evidence on vitamin D requirements is limited to work for less than a year on five or six cows in moderate to low milk production. Obviously, this is not enough to give reliable information for high-level performance on a long time basis. Based on accumulating evidence on vitamin D needs, more feed manufacturers are increasing fortification of complete dairy rations to 6,000 - 8,000 units of vitamin D per pound. As an example, when fed at the rate of 10 pounds per day, a cow would get 60,000 - 80,000 units of vitamin D daily.

q: My brood sows are getting a lot of sun-cured alfalfa hay. Will that take care of their vitamin D needs?

a: Not necessarily. One-third of twelve sun-cured alfalfa hay samples included in a recent report would have contributed less than 60 units per pound of complete brood sow ration when used at a level of 25% and the lowest one only 20 units. The highest one of the twelve samples would have contributed far less than the 500 units per pound recommended by many nutrition authorities. (Send for free reprint "The Vitamin D Content of Roughages").

q: Will it do any good to put vitamin D into beef cattle rations?

a: Very little controlled research has been done, but benefits from supplemental vitamin D have been observed in college and commercial beef herds for growing, fattening, and breeding stock. Realizing that unrecognized losses may frequently occur, many feed manufacturers fortify beef cattle rations with vitamin D.

A. C. Wallis

Send your questions about vitamin D nutrition to Dr. G. C. Wallis, Director of Nutrition, Agricultural Department, Standard Brands Incorporated, 625 Madison Avenue, New York 22, N. Y.

Fleischmann's Fidy Irradiated Dry Yeast
rich in vitamin D for four-footed animals

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THE IMPORTANCE OF VITAMIN D NUTRITION

In this educational series to farmers and feeders, Dr. G. C. Wallis answers important questions about Vitamin D Nutrition.

Today's feeds have added nutritional fortification to assure proper levels of important nutrients required for good production.

Fleischmann's FIDY Irradiated Dry Yeast is a rich and economical source of vitamin D_2—easy to use, dependable in potency, outstanding in dispersion qualities.

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Research provides new ideas on:

- **The older cow and sustained high production.**
- **The prevention of milk fever.**
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- **The variability of vitamin D from natural resources.**
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DEPENDABILITY... in Quality and Service

Fuller Names Manager Of New Houston Office

CATASAUQUA, PA.—As part of a general revision and enlargement of its representation in the South and Southwest, Fuller Co. announced here recently the opening of a district office in Houston. The new office will be managed by Joseph R. Perry.

J. R. Perry

For the past eight years Mr. Perry has been sales and service engineer for Fuller Co. in the territory including southern California, Arizona, New Mexico and west Texas.

Mr. Perry will render technical assistance on Fuller's pneumatic conveying systems to Power Machinery Co., a Fuller representative with headquarters in Tulsa and branch offices in Dallas, Houston and Kansas City.

He was a sales engineer for Sutorbilt Corp., Los Angeles, now a subsidiary of Fuller Co., from 1948 to 1951. Prior to that he was an estimator with the Sacramento (Cal.) Utility District.

Shipment of Stockers, Feeders Drops 10%

WASHINGTON — Stocker and feeder cattle and calves shipped into nine selected north central states during October dropped 10% from last year, according to the U.S. Department of Agriculture.

Total inspected shipments of stocker and feeder cattle and calves from public stockyards dropped 12%.

Shipments into the nine states totaled 1,142,836 head, compared with 1,272,852 during October, 1958. Of the total, 396,248 came through public stockyards and 746,588 were received direct. The number shipped during July-October totaled 2,778,121, compared with 2,700,456 for the same period last year—an increase of 3%.

Sheep and lambs shipped into these states in October totaled 532,363 head, compared with 636,236 a year ago—a 16% drop. Of the total sheep and lambs shipped during October, 163,264 moved through public stockyards and 369,099 were received direct. The July-October number shipped into the nine states totaled 1,742,391, compared with 1,822,619 a year ago—a 4% drop.

Total inspected shipments of stocker and feeder sheep and lambs from public stockyards totaled 540,809 head in October, compared with 467,719 a year ago—an increase of 16%.

Total inspected shipments of stocker and feeder cattle and calves from public stockyards during October totaled 823,149 head, compared with 930,480 a year ago.

Chuck Hines Moved By Kansas City Firm

KANSAS CITY—Chuck Hines has been assigned by the Butler Manufacturing Co. to represent its farm equipment division in southern Illinois. Mr. Hines will represent Butler in on-the-farm grain storage and conditioning equipment, as well as commercial grain storage facilities and bulk feed handling and storage equipment.

Chuck Hines

Mr. Hines has been with Butler since 1951 and his experience since that time has been in the engineering and sales service fields. Mr. Hines will headquarter in Decatur.

FEEDSTUFFS reprints

The following reprints of articles which have appeared in Feedstuffs may be obtained on order from Feedstuffs' Reader Service Department:

1. **Use of Linear Programming in Feed Manufacturing**—A series of seven articles—by Dr. R. F. Hutton, Pennsylvania State University **$1.00**
2. **Custom Feed Milling**—a series of five articles—by Al P. Nelson, Feedstuffs special writer **50c**
3. **Mobile Feed Milling**—a series of five articles—by Al P. Nelson **50c**
25. **Protein and Energy Requirements of Chickens in Egg Production**—by Dr. Paul E. Waibel, University of Minnesota **20c**
26. **Feedstuffs' 1959 Analysis Table for Feed Ingredients**—by Charles H. Hubbell **20c**
32. **The Feeding Value of Pelleted Rations for Fattening Ruminants**—by Dr. J. H. Meyer, University of California **20c**
34. **Processing of Soybeans for Broiler Feeding**—by Dr. E. L. Stephenson & Leland Tollett, University of Arkansas **20c**
35. **Science and Service**—a 16-page summary of AFMA Golden Year articles covering all phases of feed industry. Quantity discounts. Imprinting distributer's name for nominal additional charge **50c**
36. **Summary of Pork Contracts**—by Dr. Paul Roy, Louisiana State University **20c**
37. **Feeding Layers for Commercial Eggs**—by Dr. Robert H. Harms, University of Florida **20c**
38. **Balancing Swine Rations**—by Dr. D. E. Becker, University of Illinois **20c**
39. **Review of Poultry Science Papers Presented on Nutrition, Related Subjects**—a series of three articles by Dr. J. R. Couch, Texas A&M College **60c**
40. **Improved Feed Ingredient Processing**—Dr. J. W. Hayward, Archer-Daniels-Midland Co. **20c**
41. **Computer Formulation of Feeds**—Dr. W. H. Hastings, Kansas State University **20c**
42. **Nutritional Physiology of the Rumen: A New Approach to Rumen Nutrition**—Dr. J. C. Shaw, Formerly at University of Maryland **20c**
43. **Problems in Bulk Handling and Suggested Solutions**—J. D. Johnson, General Mills, Inc. **20c**
44. **Principles of Grain Drying**—Robert A. Saul, Agricultural Engineer, Iowa State University **20c**
45. **Effects of High Calcium in Diet**—by Dr. George K. Davis, University of Florida **20c**
46. **Feedstuffs Quarterly Indexes,** First and Second Quarters, 1959 .....each **50c**
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49. **Limited Feeding vs. Limited Energy Feed for the Growing Pullet**—Dr. J. H. Quisenberry, Texas A&M **20c**
50. **Relationship of Feeding to Ketosis in Dairy Cattle**—Dr. L. H. Schultz, University of Wisconsin **20c**
51. **Broiler Industry Management**—Prof. Ewell P. Roy, Louisiana State University **20c**
52. **Analysis and Feeding Value Tables for Beef Cattle and Sheep**—6-page article, by Dr. S. H. Morrison, Nutrition Consultant, 25c single copy; 3-5 copies 15c ea.; 10 or more, 10c each.

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Reader Service Department **Minneapolis 40, Minn.**

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Research Discussed at Cyanamid Meeting For Farm Editors

CHICAGO—The value of commercial research as a source of continuing progress in animal and plant agriculture was emphasized by the American Cyanamid Co. recently in a special meeting for farm editors and broadcasters, held at the Ambassador West Hotel.

A team of 14 Cyanamid technical men from research and development, as well as marketing areas of the company, gave a broad review of projects and products in a session designed to help "know your researcher and his part in present and future farm products and practices."

Dr. J. T. Thurston, director of research and development, predicted that while Cyanamid is now spending "about $1 million a year" on research, the company would in all probability be spending $10 million annually in 10 years. He and other speakers brought out these points, among others:

● Potentiation of antibiotics appears likely to be widely used in the year ahead, and Cyanamid sees the possibility that the potentiation process can double the effectiveness of Aureomycin. So far the technique is being used in poultry feeds, but it soon will be in swine feeds and, before the year is out, probably will be in ruminant feeds. It was explained that potentiation can be achieved by lowering dietary calcium or adding terephthalic acid to the feed (latter not now cleared by Food and Drug Administration).

● Mixing Aureomycin in salt has extended the antibiotic's availability to a wider range of ranch and feedlot conditions, beyond the existing methods of mixing it in feeds for beef and dairy cattle and sheep. Also, Michigan State University trials recently reported have indicated a significant increase in milk production from feeding the antibiotic with the regular dairy herd ration.

● Feed grade urea is one of Cyanamid's newest products, as part of the firm's further emphasis on fertilizers through production of industrial grade urea.

● It was emphasized that Cyanamid plans to continue its program of cooperation with land grant college research. Also it is currently building a 600-acre research farm at Princeton, N.J., for conducting the company's own research in all phases of plant and animal agriculture. Other research activities include leased commercial feedlot facilities where feeding and disease problems are being studied.

Fewer Corn Belt Feeders, Lots Seen

DES MOINES—Within the next 10 years, cattle feeders in the Corn Belt states will be handling several thousand head instead of a few hundred, an agricultural expert predicted at the Iowa Farm Bureau Federation livestock conference recently.

James S. Holderness of the Doane Agricultural Service, St. Louis, stated: "If they don't the Midwest could lose its position as the nation's foremost cattle feeding area."

Mr. Holderness also noted that this means that fewer farmers will be in the feeding business. He added that stiff competition from other areas will force Corn Belt feeders into commercial-type operations.

Mr. Holderness listed among the changes, population shifts and improvements in transportation, making it less costly to transport feeds. Some of the dominance of the Corn Belt states in cattle feeding has been lost to large commercial feeding operations in the West and Southwest, he pointed out. Many of them are handling 1,000-3,000 head at a time and turning out 2,500-7,500 fed cattle a year, he said.

"I believe that of 16 feeders handling 100 head of cattle in 1960, it might be expected that by 1970, only 12 of them would be farming and that eight would be feeding cattle," Mr. Holderness said. He judged that they would be feeding 2,300 head, however. He emphasized the economy in handling larger numbers of cattle.

Prof. Dale Hull, Iowa State University, discussed the ways in which automation might be applied practically to Iowa farm feedlots. He estimated that at least 200 head of cattle would be needed to make a practical push-button feeding setup.

Both speakers said they expected that Iowa would turn more and more to automatic feeding setups and larger operations and pointed out that some of this trend already is underway.

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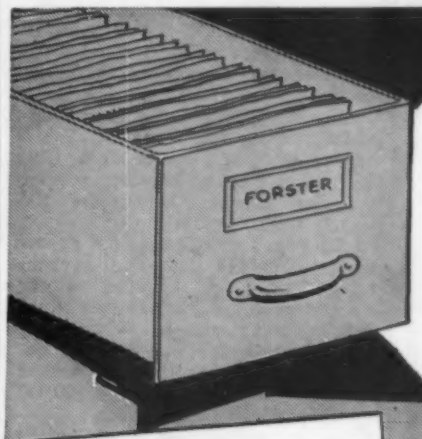

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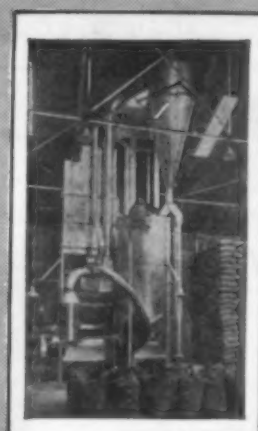
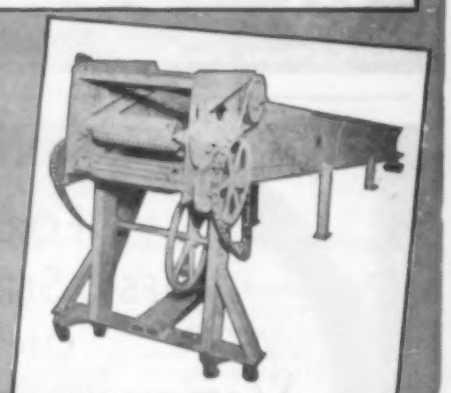
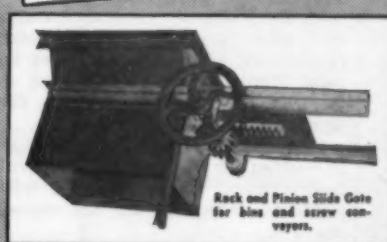

Blending installation, showing Blender, dust control and Bag Cleaner.


Block Buster and Feed Table for Hammermill.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Slump in Shipments Of Buffalo Grains May Set Record

BUFFALO—Buffalo's once profitable grain trade appears headed for its lowest shipping season in four decades.

Plagued by St. Lawrence Seaway competition and a startling reduction in the movement of export grain via rail to the Eastern Seaboard, commercial waterfront elevators have received only 50,573,537 bu. via lake ships since the opening of navigation.

This is a plunge from a year ago when the Nov. 3 figures compiled by the Corn Exchange showed 68,280,435 bu. elevated here.

Unless an exceptionally heavy movement develops between now and the close of navigation, the port will experience its poorest year in grain receipts since 1918. In that year, 63 million bu. were consigned here for unloading during the navigation season.

Unlike recent years, however, the 1918 winter storage grain fleet reached record breaking proportions, holding 40 million bushels for unloading during the winter.

In only eight seasons since 1918 have grain receipts here for prompt unloading dropped below the 100 million bushel mark.

Last year's unload receipts aggregated 85,938,619 bu. The over-all movement, which included winter storage receipts, jumped the total to 97.5 million bushels.

This year's showing is poor despite the fact that the lake season movement of grain is nearly 800,000 net tons ahead of last year.

The 8.8 million net tons shipped from the head of the lakes to Oct. 1 included millions of bushels sent directly overseas via Montreal and the Seaway. In a majority of instances, the grain by-passed Buffalo.

In recent weeks, grain receipts here have varied from 1 to 3 million bushels over a seven-day period. This is unusually low for this time of the year and there is no indication any late season rush will develop.

Iowa Farm Bureau Service Sales at High

DES MOINES—Farm Bureau Service Co. of Iowa reported a new high in sales during 1959 at its annual meeting here recently.

E. O. Johnston, general manager, said sales totaled $23,304,360 which represented a 15% increase over last year. Net profits also increased and totaled $1,488,419 before taxes, dividends and patronage refunds.

Petroleum and plant food products accounted for 93% of the sales while feed, animal health and building products accounted for the remaining 7%.

Mr. Johnston reported on new developments during the past year. He cited the start of the expansion into livestock and poultry feeds, the development of the new building business, distribution, for the first time, of grass and legume seeds, twine and livestock and poultry equipment.

NEW HONEGGER DEALERS

FAIRBURY, ILL.—Seven dealers have announced that their firms will handle the complete line of products manufactured by Honeggers' & Co., Inc., including livestock and poultry feeds, Honegger layers and farm buildings and equipment. They are: McDonald Elevator, Inc., Taylorville, Ill.; Hansen Milling Co., Eagle, Wis.; Gro-Mor Fertilizer & Feed, Nevada, Iowa; Drake's Mobile Farm Service, Mason, Mich.; Dewey's Farm Supply Service, Attica, Ind.; Record Hatchery, Bloomington, Ind., and Bucyrus (Ohio) Farmers Exchange.

Mother (on phone): "My son, Tommy, just brought in the peaches from your store. I ordered 5 pounds but my scales show there's only four and a quarter."

Storekeeper: "I can assure you Mrs. Jones, that our scales are accurate. They're inspected regularly. Why don't you weigh Tommy?"

◆ ◆ ◆

A tourist stopped to talk with a backwoods farmer. "I see you raise hogs almost exclusively around here," he said. "Do they pay better than corn and potatoes?"

"Well, no," drawled the farmer, "but hogs don't need no hoein'."

◆ ◆ ◆

Down in the mountains below the Mason-Dixon line, one of the inhabitants threw himself on the ground as a rifle ball whizzed past his head. Turning around, he discovered a neighbor calmly reloading his squirrel rifle.

"Hey, Lonzo," he cried, "what are you shooting at me for? I got no quarrel with you."

"No, you ain't," Lonzo said, "but you and Jubal Suggs had a feud on, didn't you?"

"Sure," the target replied, "but old Jubal's dead."

"Well," said Lonzo, preparing to take aim, "I'm executor of the estate."

◆ ◆ ◆

An Irishman was inviting a friend to his wedding anniversary. Carefully, he explained how to find him in the apartment building where he lived.

"Come to the ninth floor," he said, "and when you see the letter 'J' on the door, push the button with your elbow and when the door opens put your foot against it."

"Why do I have to use my elbow and my foot?" asked the friend.

"Well, an that's a silly question!" exploded the Irishman. "An sure you're not comin' empty handed, are you?"

◆ ◆ ◆

Monty Frizzel says that going to a party with his wife is like going fishing with the game warden—whatever he catches he's got to throw back.

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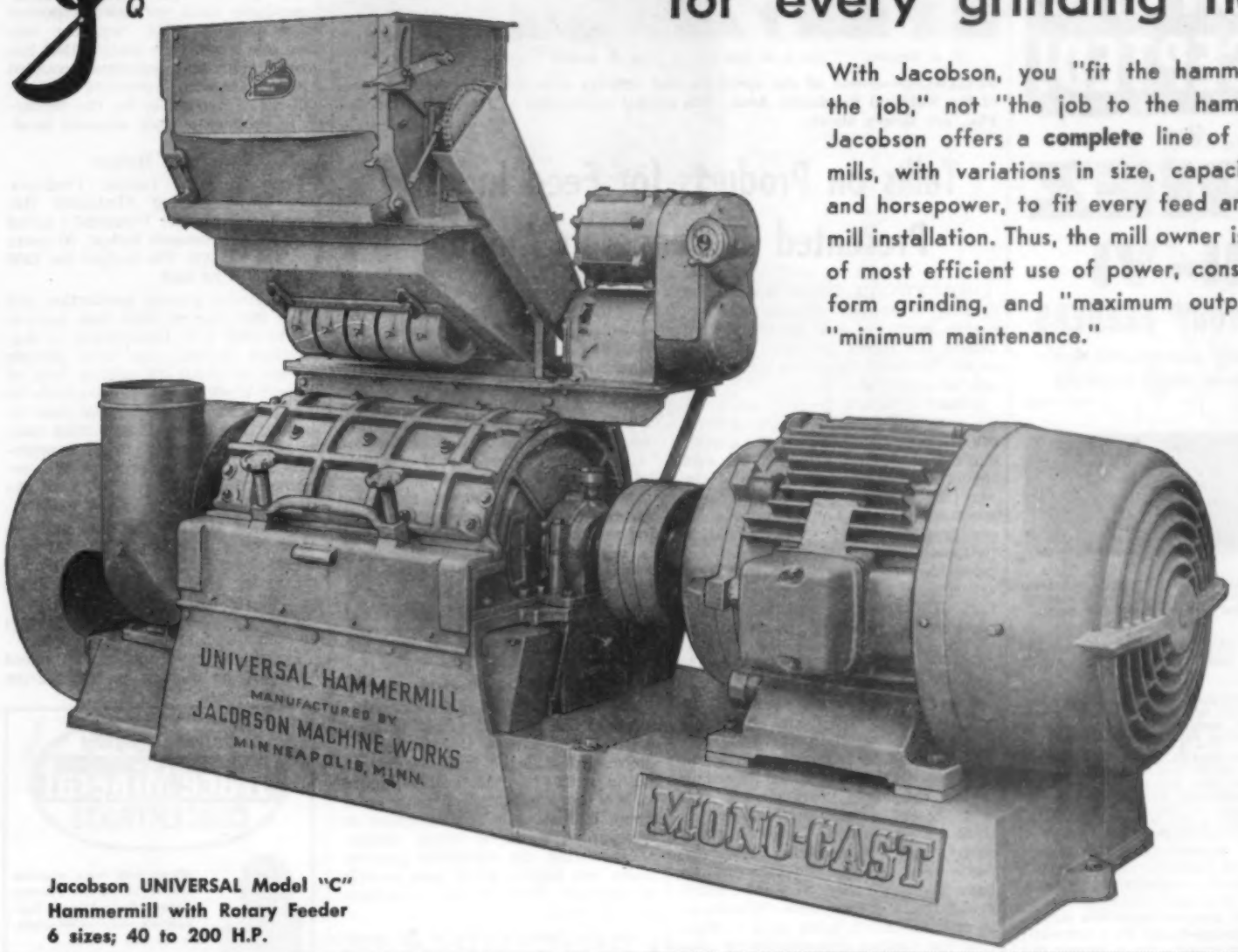
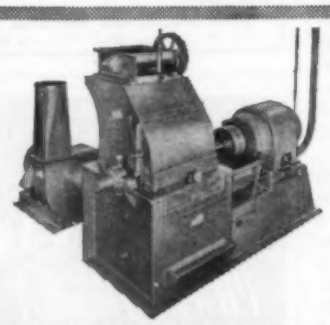
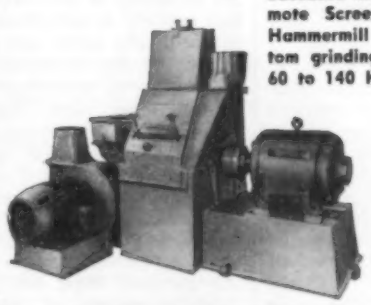


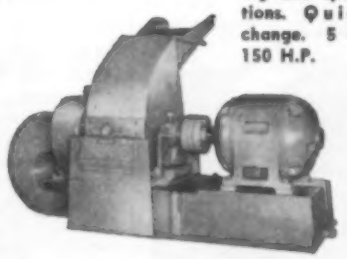
Jacobson UNIVERSAL Model "C" Hammermill with Rotary Feeder 6 sizes; 40 to 200 H.P.



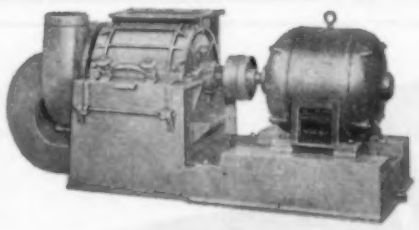
Jacobson AJACS-O-MATIC Remote Screen Change Hammermill. 4 sizes; 50 to 160 H.P.



Jacobson MASTER Remote Screen Change Hammermill for custom grinding. 3 sizes; 60 to 140 H.P.

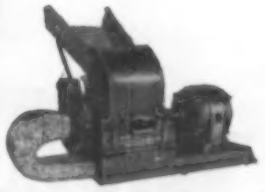


Jacobson AJACS Hammermill for custom grinding and special applications. Quick screen change. 5 sizes; 20 to 150 H.P.



Jacobson UNIVERSAL "Junior" Hammermill. 3 sizes; 10 to 50 H.P.

Jacobson AJACS Model "IT" Hammermill. 4 sizes; 20 to 100 h.p.



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R. J. Fleming | A. J. Gehrt | J. H. Haugh | Gene Hopton

SPEAKERS—Some of the speakers and officers who were on the program of the National Renderers Assn. 26th annual convention at Hollywood Beach, Fla., are shown above.

Talks on Products for Feed Industry Presented at Renderers Meeting

HOLLYWOOD BEACH, FLA.—Quality of animal protein and research needs on feed products were among the topics discussed recently at the National Renderers Assn. 26th annual convention here.

Albert J. Gehrt, head of the quality control division of Moorman Manufacturing Co., discussed quality control of animal proteins. He said the renderer should be aware of the fact that in commercially rendered meat scrap a number of amino acids are seriously deficient, indicating that undesirable changes have occurred in processing which may considerably reduce the amino acid content. He said it is the task of the renderer to retain as much of the nutritional value as possible in producing a stable and palatable product.

Regarding analytical methods in quality control, Mr. Gehrt said quality control of animal protein ingredients is based on adequate analysis to learn as much as possible regarding them. "For many years protein, fat, calcium and phosphorus determinations have been used for establishing their general composition. However, more recently analytical techniques have been extended to yield considerably more information. Microscopic examination is being used to identify the various components or contaminants in a sample; and the pepsin digestibility test can measure the percentage of the sample that is likely to be indigestible and hence useless to the animal."

Inspection

On microscopic inspection, Mr. Gehrt said the crude protein content of a meat scrap containing significant quantities of hoof, hair or overheated meat tissue would be high but its nutritional value as a protein source would be reduced due to the indigestibility of these components. Although not differentiated from digestible protein by the Kjeldahl method, he said, these indigestible materials are easily recognized under the microscope.

Mr. Gehrt also told of studying the digestibility of animal proteins by subjecting them to the action of a simplified artificial gastric juice containing pepsin and dilute hydrochloric acid. He said that although most of the products tested contained 10% or less of indigestible material, a few ranged as high as 25% indigestible. "Also, most of the particles which did not appear under the microscope to be meat or bone were found to be concentrated in the indigestible residue and were subsequently identified as vegetable fiber, hoof, hair and overheated or scorched meat tissue."

Practical applications and the analytical procedure of the pepsin test for determination of pepsin-digestibility were also covered by Mr. Gehrt.

Processing Control

The importance of processing control and the harmful effect of mild overheating was also stressed by Mr. Gehrt. He said the level of certain amino acids is considerably higher in beef muscle compared with meat scrap, indicating a decomposition or tying-up of some of these components during the rendering process. Gains are higher when beef muscle is carefully dried without overheating, he said.

Similar harmful effects of overheating on the nutritional value of protein with swine were cited by Mr. Gehrt. However, he pointed out that the reduction in the performance was due entirely to intentional overprocessing of the meat, fish and soy and would not be likely to be encountered in good commercial practices.

Mr. Gehrt said, "Probably the three most important factors in maintaining superior quality are avoidance of spoilage before processing, minimizing contaminants such as paunch content, hoofs and horns, and careful processing control." He said improvements in processing offer the greatest hope for the future. "Careful control of rendering time and temperature using present equipment will certainly be beneficial," he said. "However, the processor should not overlook the possibilities offered by the new vacuum or low temperature process which could give meat products vastly improved nutritional value."

He said that although most feeding tests may be too long for routine or control purposes, they are becoming more and more streamlined. "In fact," he said, "reasonably dependable data are being reported using feeding tests requiring less than one week. It is certain that improved analytical techniques coupled with advances in processing methods will make it possible for the renderer to produce a truly superior product."

Research Budget

Gene Hopton, Inland Products, Inc., in discussing "Industry Research and Market Potential," noted that NRA's research budget 10 years ago was $25,000. The budget for 1960 is $159,500, he said.

Concerning protein production and sales, Mr. Hopton said that according to 1958 U.S. Department of Agriculture figures, the total protein market is about 14 million tons of various kinds of protein available to the American feed or mixed feed industry. He said about 10 million tons, or about 70%, of the total is represented by soybean protein. The remaining four million includes all the other protein forms in the industry.

He said that of the four million, about one million is produced by renderers. Renderers began merchandising to the feed industry about 1900, he said, and at one time were merchandising about 90% of all protein manufactured to the feed people.

Possible competition of cottonseed and soybean oils as energy sources

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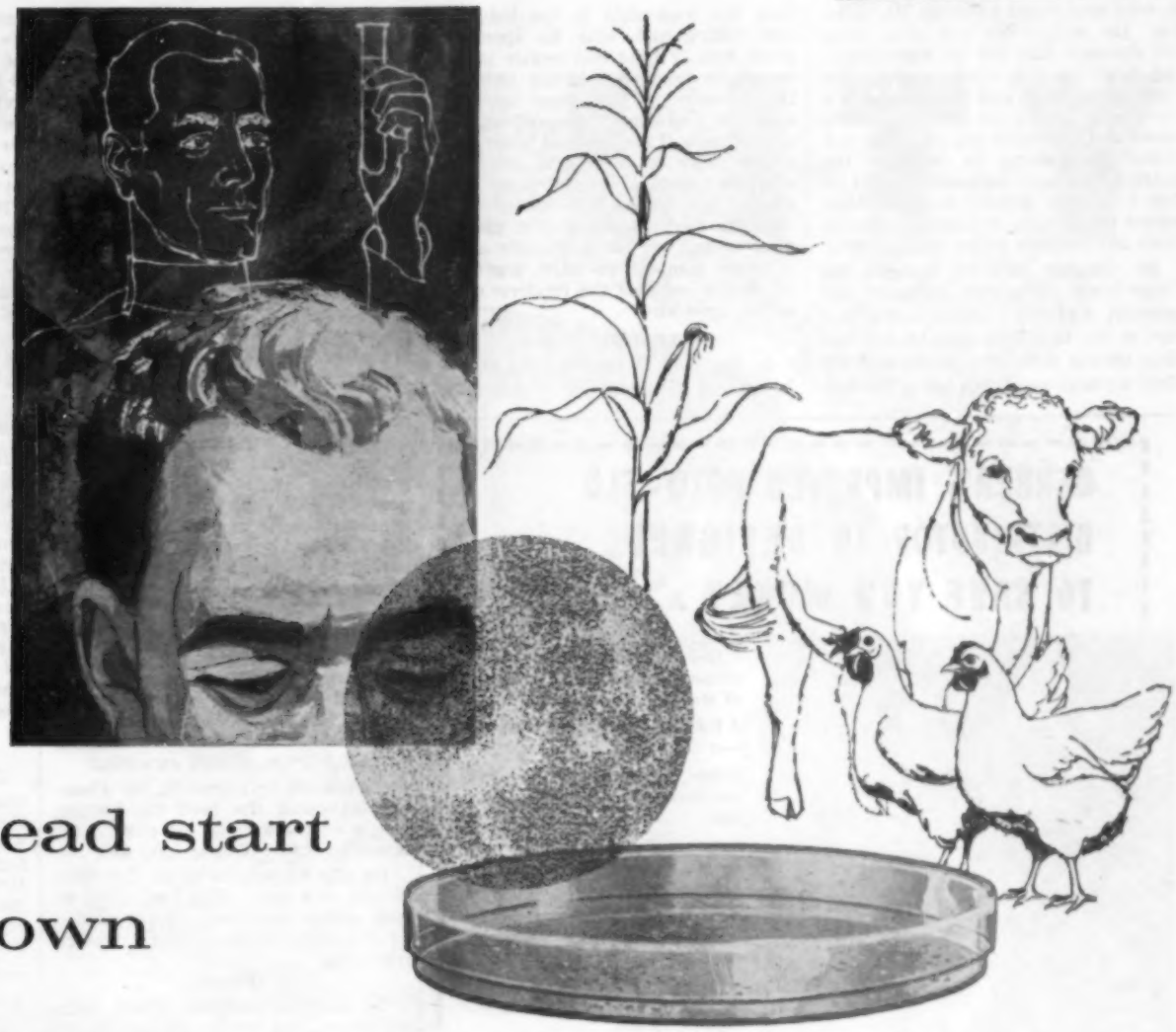

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in feed was pointed out by Mr. Hopton. He said, "We not only have the cheapest fat, but we have pressing down on this whole picture the inedible soybean and cottonseed. We have seen this in fat and feed being invaded by soybean oil, and they are definitely pushing in because the market has been reduced from 14 or 15¢ lb. to the present level of 8½¢, where they can definitely compete with our inedible tallow and grease."

Mr. Hopton said he thought the "significant difference between our product and the soybean material lies in the fact that even though the first efforts were very crude and the first soybean meal was not a big success, the leadership in the industry was willing and able to spend a great deal of time and money in research to produce a better product. It's actually in that field that we have our problem in competition."

Renderers have learned from research work on fatty acid structure whether vegetable oil and tallow and grease are completely interchangeable, he said. Anything that can be done to improve the product or make it more competitive with vegetable oil should enhance the renderer's position, he added.

Modified Fat Forms

In the field of modified fat forms, he said, is the possibility of a dry fat form for making high energy poultry rations containing 30-40% fat. He said if 50% of the poultry industry ration used 30%, they would be using one million tons per year. "If the entire poultry industry should be shifted into high fat, high energy ration the figure would be two million tons a year, so it would be rather beneficial to this organization (NRA) to have a fat, a dry fat form, to fit this particular situation."

The feed industry would like to have more fat, he said. "If an ester can be formed so it would be 60% fat and 40% sugar, it would make a better product for this utilization in feed. This is important because every feed manufacturer in the country, if he had his choice, would like to shift over to a greater percentage of feed in the dry form and use only that percentage of fat to control dustiness and palatability. We would have a better chance to expand this market if we had both forms to offer and permitted the feed industry to make its choice."

Budget

R. J. Fleming, president, NRA, gave a breakdown of the organization's near $180,000-a-year budget. He said $130,000 is spent for research, $20,000 for advertising, public relations and product promotion and $30,000 for general expenses.

On market development, Mr. Fleming expressed the need for putting tallow on the surplus list eligible for financing under Public Law 480.

He also made note of the fact that in the past year, NRA has added 14 new active members, 14 companies, 14 associate members and 4 foreign members.

Panel

A panel discussion, "Plant Construction, Expansion, Modernization and Addition and Replacement of Equipment," was held. Participating were: Dan Crane, V. D. Anderson Co.; Lou Crawford, Albright-Nell Co.; Ernest Kopp, Globe Co.; J. C. Mellon, French Oil Mill Machinery Co.; Oscar Schmidt, Cincinnati Butchers Supply Co., and Frank Schottelkotte, Dupps Co.

Tremendous interest in bulk handling was shown in a survey tour of the Southern American market development program by John H. Haugh, second vice president of the association.

"Probably our major apparent success on this trip was the interest shown in bulk handling," Mr. Haugh noted. "In many cases, the obvious saving on freight plus cost of drum was increased by the reduction of the import taxes which applied on gross weight as well as ad valorem. In other words, those people importing were paying a tax on the drum plus the tallow, and if they bought the material in bulk, there was a very obvious saving."

Market Development

"The formulation, initiation and execution of a dynamic, aggressive market development program for tallow and grease in our principal foreign markets," was urged by Dalton L. Wilson, chief, foreign marketing branch, livestock division of the Foreign Agricultural Service of USDA.

Mr. Wilson also suggested other activities to consider in market development. He urged distribution of material available in the U.S. "These people in the feed business (in foreign lands) are intelligent. Most of them have received their education in the States and are top notch nutritionists," he noted.

An industry committee to aid in establishing a liaison between the renderers and the National Independent Meat Packers Assn. Accounting Conference in working out some of the problems and improvement in the area of accounting, was suggested by J. Ellis Swint, secretary-treasurer of Southern Foods, Inc., Columbus, Ga. Mr. Swint was one of the organizers of the conference and spoke to the renderers on "Better Accounting Practices."

He pointed out that the suggestion had been made to the board of directors and that it would be brought before the board in New Orleans. Mr. Swint expressed the belief that "it will possibly develop into an official invitation from us to you that we do set up such a group as that."

Sale Announced

ST. LOUIS, MO.—Sale of its hybrid field corn business to Ed F. Mangelsdorf & Bros., Inc., St. Louis, was announced by Corneli Seed Co. here recently by Earl M. Page, Corneli president.

It was emphasized by Mr. Page that Corneli is continuing its program of breeding hybrid sweet corn.

Earlier this fall, Corneli closed out its stock of general farm seeds. This leaves two departments, garden seed and lawn and garden supplies.

NEW MANAGEMENT

CUBA CITY, WIS.—Wayne Feeds recently announced that Farmers Quality Feed Mill (formerly Frank's Feed Mill) is under the new management of Myron Olson and Ralph Brogley. Mr. Olson formerly owned his own portable mill and Mr. Brogley had been associated with Runde Feed & Farm Supply.

GIVE HIM A TIP HE'LL THANK YOU FOR

Remind him to order Morton T-M Salt. See page 79.

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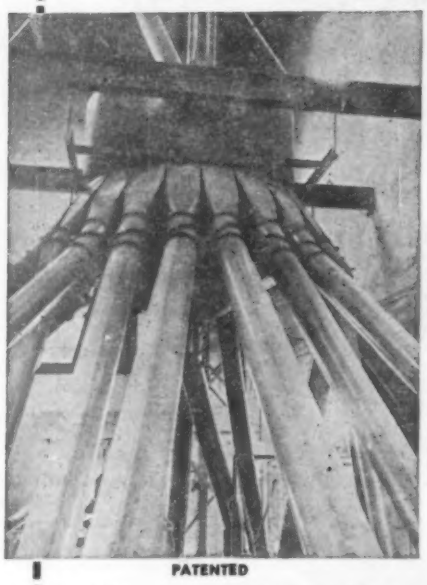

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★ No Distributor Floor Needed —a big saving.

★ Less Cupola Height Required — lower overall construction cost.

★ Added Economy — fewer bin spouts required—two legs can channel material into bin through the same spout.

★ Positive Locking—control of material flow is assured.

★ Greater Flexibility — almost no limit to number of bins which may be served.

★ Better Material Flow — even with lower cupola, pitch is good.

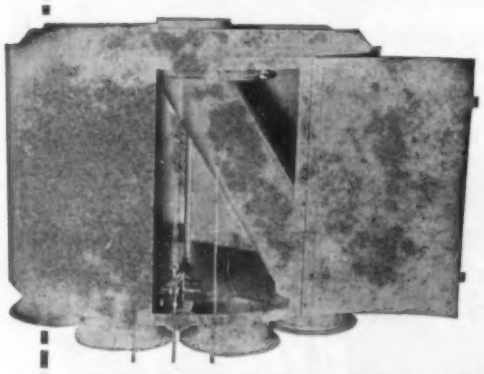
★ Legs cannot plug — reduced fire hazard and elimination of damage to motors and belts.

★ Positive Dust Control — reduces danger from dust explosions — simplifies housekeeping —assures against loss through dust leakage.

Write About Your Distributor Problem. Literature and Installation Prints Will Be Sent on Request.

GERBER SHEET METAL, INC.
520 SOUTH THIRD STREET • FE 8-8461
MINNEAPOLIS 15, MINNESOTA

FOR BETTER, MORE EFFICIENT DISTRIBUTION OF MATERIALS IN YOUR MILL . . . IT'S—



Gerber's *New* Round Revolving Valve *or* Distributor

Designed with round inlets and outlets to eliminate special square to round fittings. Requires less height than the standard valve. Offers positive control with no danger of a leaking valve. Can be used as a distributor on a single leg installation. Gerber adjustable elbows recommended for top efficiency and convenience.

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A "MUST" IN EVERY SWINE OR POULTRY RATION
Call or write for complete information and price
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STABILITY

A Superior Dry Vitamin A Feed Supplement

PROVEN STABILITY: Dawe's FIXTAY retains a high degree of potency over extended periods under normal and elevated temperature and humidity conditions. Even in high mineral mixtures, containing as much as 40% trace minerals, Dawe's FIXTAY maintained this remarkable stability:

MIXTURE No.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Percent of Vitamin A remaining after 3 months	98.6	97.8	95.4	98.6	95.6	95.4

COMPLETE AVAILABILITY: Biological tests prove Dawe's FIXTAY is fully available to the animal for early absorption in the digestive tract.

UNIFORM DISPERSION: Dawe's FIXTAY is of a particle size and shape which readily disperses and remains uniformly distributed.

Dawe's FIXTAY is available in all practical potencies. Write for samples and quotations on the potency of your choice.

World's Oldest and Largest Specialists in Vitamin Products for Feeds

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Plants and warehouses strategically located throughout the United States to serve you without delay.

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☆ Classified Ads ☆

Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $12.00 per column inch. No discount on ads ordered for more than one insertion. All Want Ads cash with order.

HELP WANTED

FEED SALESMAN TO CALL ON FARMERS and ranchers. Knowledge of poultry and livestock essential. Louisiana territory. Apply in writing to Ad No. 5393, Feedstuffs, Minneapolis 40, Minn.

EXPERIENCED, AMBITIOUS SALESMEN or manufacturer's representatives by established, expanding company. Exclusive and unusual products in animal health and nutrition field. Territories open coast to coast. Replies confidential. Our representatives know of this ad. Address Ad No. 5358, Feedstuffs, Minneapolis 40, Minn.

NATIONAL FEED INGREDIENT PROCESSOR desires reputable salesman, nutritional background. Call on feed mills, New York, New Jersey, Delaware, Maryland. Excellent opportunity to establish satisfying career. Write complete details, qualifications to Ad No. 5397, Feedstuffs, 551 Fifth Ave., New York, N. Y.

WANTED — SALESMAN FOR WELL ESTABLISHED progressive Ag. insecticide and herbicide formulator serving the Midwest. Must have technical and selling experience and be willing to travel. Splendid opportunity for the right man. Give complete resume on education, age, experience, availability. Address P. O. Box 138, Kansas City 18, Kansas.

WANTED—ADVERTISING MANAGER FOR publication specializing in farm sales and service. Sales experience in agricultural field a requirement. College training in agriculture desirable. Some related travel. Attractive salary, profit sharing, pension, group insurance and other fringe benefits. Send complete resume to Box No. 5412, Feedstuffs, Minneapolis 40, Minn.

MANUFACTURER'S REPRESENTATIVE — Well known manufacturer has opening for man now calling on feed dealers to sell special fast selling product to dealers, good commission, payable monthly, full credit on repeat business, excellent sales promotion program. For details give territory now covering and how often. All replies confidential. Write R. F. Davis, Box 5020, Minneapolis 6, Minn.

LARGE NATIONAL GRAIN COMPANY needs man with experience in grain elevator or milling operations to assist in cost reduction studies. Knowledge and experience in time and motion study procedures essential. Please furnish complete data in first letter—personal information, education, experience, references and salary expected. Address Ad No. 5418, Feedstuffs, Minneapolis 40, Minn.

MAJOR MANUFACTURER OF BULK FEED delivery units needs aggressive, personable salesman to sell in central Midwest territory. Locate around mid-Illinois. Salary plus commission. Car and travel expenses furnished. Paid vacation, insurance program, and other fringe benefits. Feed industry, truck or comparable sales experience desirable. Address Ad No. 5441, Feedstuffs, Minneapolis 40, Minn.

SALES ENGINEER — FAMILIAR WITH feed milling machinery, pellet mills, coolers, liquid blending equipment, feed mill layouts. Age 30 to 40, engineering background, heavy emphasis on sales. Interested in high earnings $15,000 per year or better. Travel Monday through Friday. Sober and reliable. Only man possessing above qualifications and presently successful need apply. Address Ad No. 5199, Feedstuffs, Minneapolis 40, Minn.

MILLING EQUIPMENT SALESMAN

Experienced sales engineer by large Southwest equipment manufacturer specializing in feed mill, cereal and processing equipment on national basis. Ready to introduce several new patented items. Car furnished, good salary and commissions. Plenty of leads, excellent territory. Best opportunity for right man. Our employees know of this ad. Give all details for personal interview. Address Ad No. 5479, Feedstuffs, Minneapolis 40, Minn.

MACHINERY FOR SALE

RECENTLY REBUILT MASTER MODEL California pellet mill complete with 30 H.P. motor, starter, 3/16" die, 5/32" die, two sets rollers, two A cooler and Davis 9x24 crumblizer. Address Ad No. 5430, Feedstuffs, Minneapolis 40, Minn.

MACHINERY FOR SALE

FOR SALE—USED MODEL B-16 ELTON bag conveyor. Chantland Mfg. Co., Humboldt, Iowa.

12½-TON TOLEDO DIAL SUSPENSION hopper scale, like new, 32 inch dial, Model 2500. O. W. Meyer, Napoleon, Ohio.

PURITAN 1-TON MINERAL MIXER. Excellent condition. No motor, $400. Wright Feed Mill, David City, Neb.

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

1956 DAFFIN PORTABLE FEED UNIT. Excellent condition. Northern Iowa. Address Ad No. 5432, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—1958 B & L MOBILE MILL mounted on Ford F 750 truck. Excellent condition. Joe Gamble, Mechanicsville, Iowa.

FOR SALE—IN GOOD CONDITION, ONE Daffin mobile mill, mounted on 1955 Ford. Mill operating every day. Write Columbus Milling Service, P.O. Box 2316 or phone F. A. 8-2462, Columbus, Miss.

ALMOST NEW FORDS MOLASSES BLENder (model 2-rh), 15 H.P. TE motor, 1,500 R.P.M. and Buffalo motor. Complete for $1,200. Wright Feed Mill, David City, Neb.

SALE—SPROUT-WALDRON 335 CU. FT. horizontal ribbon mixer. Type 304 stainless steel dry material handling installation, including: 1,800 cu. ft. weigh hoppers, bucket elevators, shaker and screw conveyors, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

FOR SALE—ENCLOSED MOTORS; RICHardson Scale; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FOR SALE—4-CYLINDER, 80 H.P. ATLAS diesel, running condition, 15 KW generating set with switchboard, also 6 cylinder 120 H.P. Atlas diesel with broken crank shaft, outboard bearing, with clutch pulley, and 50 KW generating set, V-belt driven. Coxsackie Milling & Supply Corp., West Coxsackie, N. Y.

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 24, Md.

WANT TO BUY ONE-TON USED MOlasses blender. F. M. Burnside, Cherokee, Iowa.

ELECTRO-MAGNET, SUSPENDED TYPE, general industrial model, rated 1045 watts, D.C. Address Ad No. 5375, Feedstuffs, 551 Fifth Ave., New York 17, N. Y.

WANTED—GOOD USED CALIFORNIA HYflo pellet mill and California Master. Santa Ynez Grain & Milling Co., Santa Ynez, Cal.

WANT TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

WANT ALFALFA DEHYDRATING EQUIPment. Bucket elevator approximately 700 bu. per hour. Give details. Address Ad No. 5419, Feedstuffs, Minneapolis 40, Minn.

BUSINESS OPPORTUNITIES

MODERN HATCHERY AND BREEDING farm—54 acres in beautiful high central Florida. New CB 3-bedroom home; 140,000 egg capacity hatchery; equipped egg room and cooler; 12 laying houses with capacity for 30,000 layers. Completely equipped, in operation. Air photos on request. Address Ad No. 5433, Feedstuffs, Minneapolis 40, Minn.

BUSINESS OPPORTUNITIES

FEED MILL-ELEVATOR, COMPLETE equipment, machinery, truck; good sales volume; northwest Ohio, with property. Address Ad No. 5423, Feedstuffs, Minneapolis 40, Minn.

FOR SALE — SEVERAL GOOD GRAIN elevators and feed mills in Indiana. Financing can be arranged. When buying or selling a grain or feed business, call us. Boyer & Nail, Real Estate Brokers, Milroy, Ind.

FOR SALE—TO SETTLE ESTATE, FEED plant and produce business in the heart of the Red River Valley. Incubators and other equipment can be purchased separately. Call or write George E. Sorlie, Hillsboro, N. D.

FOR SALE — CUSTOM GRINDING AND mixing equipment with molasses blender, plus seed cleaning and treating equipment. Building has trackage, good loading and unloading facilities. Located in Mt. Vernon, Mo. For details, write Mt. Vernon Feeders Supply, Inc., 1700 West Walnut, Springfield, Mo.

SITUATIONS WANTED

10 YEARS' EXPERIENCE IN ADMINIStrative duties. Northwest area preferred. Address Ad No. 5435, Feedstuffs, Minneapolis 40, Minn.

MANUFACTURER'S REPRESENTATIVE desires high quality feed ingredients, nutritional, specialty equipment lines. East Central, mill and direct coverage. Address Ad No. 5426, Feedstuffs, Minneapolis 40, Minn.

FEED MACHINERY SALES—SUCCESSFUL feed mill machinery salesman wants exclusive machinery or equipment contract for Kansas City trade area as either agent or employee. 10 years this territory. Best of references. Russ Akrigg, 2800 W. 50th St., Kansas City, Kansas; Skyline 1-3422.

EXPERIENCED SALESMAN — SALESMAN for the last 2½ years for well known East Coast distributor, selling vitamin pre-mixes, antibiotics and feed ingredients to feed manufacturers from Maine to North Carolina. Will travel. Also 14 years' practical poultry experience. George Landau, No. West Avenue, Vineland, N. J.; Oxford 1-0233.

I'm walking on air...

Just had my annual medical checkup. (Smart move.) I'm making out a check to the American Cancer Society, right now—that's a smart move, too.

Guard your family! Fight cancer with a checkup and a check!

AMERICAN CANCER SOCIETY

CHECK FEEDSTUFFS WANT ADS!!

FOR SALE

Feed & Grain Handling & Processing Equipment

NEW & USED

Scales, Hammermills, Feed Mixers, Sewing Machines, Elevators

Pellet Mills, and Grain Cleaners

E. H. Beer & Co., Inc. Ibsen Ave. & Newkirk St. Balto. 24, Md.

Smith-Douglass Picks Southeast Salesman

NORFOLK, VA. — Smith-Douglass Co. has announced the appointment of B. Sullie Culpepper as sales representative for Coronet Defluorinated Phosphate in the Southeast. Mr. Culpepper is a 1959 graduate of Virginia Polytechnic Institute where he received a bachelor of science degree in animal husbandry.

B. S. Culpepper

A native Virginian, Mr. Culpepper was born in Suffolk in 1932 and attended Suffolk High School. He served with the U.S. Army from 1953 to 1955. In his new capacity, Mr. Culpepper will be reporting to Henry Highton, manager of feed phosphorus sales for Smith-Douglass Co.

Corn Products Names Five Vice Presidents

NEW YORK—The appointment of five regional vice presidents for the new and re-organized Corn Products sales division of Corn Products Co. was announced recently by A. N. McFarlane, president of the division.

The regional vice presidents will report to Harold Plimpton, Jr., vice president and general manager of the division. They include Harold V. P. Francis and Michael D. Mullin in the eastern region with headquarters in New York; Tim C. Clawson in the central region with headquarters in Chicago; Fred C. Hassman, Jr., in the southern region with headquarters in Memphis, and James E. Walz in the western region with headquarters in San Francisco.

The Corn Products sales division will be responsible for the sales and merchandising of all industrial products, including those previously handled by the company's Best Foods division.

Corn Products Co.'s line of consumer products will become the responsibility of the new Best Foods division.

Sunflower Meal Rated High as Protein Source

OTTAWA—Sunflower seed oil meal ranks high as a major protein supplement for laying hens, judging from experimental results from the Canada Department of Agriculture.

In rations containing 2 or 2.5% fish meal, the complete replacement of other supplementary protein sources with sunflower seed oil meal had no influence on mortality, egg production, egg weight or body weight maintenance.

However, when meat meal was replaced by its protein equivalent of sunflower seed oil meal and by an equivalent amount of mineral supplements, feed consumption tended to be higher.

Since low dietary energy is usually associated with high feed consumption, it appears that the sunflower seed oil meal diet was relatively low in energy, says CDA.

These experiments involved 324 pullets confined to individual cages and 630 pullets in floor pens.

NEW FEED FIRM

SPRINGFIELD, ILL.—A business charter was issued recently to Griggsville Feed Mill, Pittsfield, by Charles F. Carpentier, secretary of state. Charles Borrowman, Orrin Borrowman and Cecil J. Burrows were listed as incorporators and authorized to issue 1,000 shares of stock.

CORNELL CONFERENCE—Some of the speakers and others at the recent Cornell Nutrition Conference in Buffalo are pictured here. Left to right in the first photo are Dr. S. H. Morrison, Agricon, Clinton, Iowa; Dr. C. M. Chance, Cooperative G.L.F. Exchange, Inc., Ithaca, N.Y., and Dr. D. E. Hogue of Cornell University. In the second picture are Dr. Morley R. Kare of Cornell and Dr. H. Yacowitz, Nopco Chemical Co., Newark, N.J. Shown visiting in the third picture are Dr. R. G. Warner of Cornell; M. L. Ziegler, Ziegler Bros. Feed Mills, Gardners, Pa., and Dr. A. van Tienhoven of the Cornell staff.

Says Georgia Faces Large Poultry Loss

SPARTA, GA.—Alpha A. Fowler, legislator and poultryman, Douglasville, Ga., said before the Sparta Lions Club recently that Georgia faces a possible loss of $50 to $100 million from poultry in 1960.

Mr. Fowler said, "Most of the blame is on the shoulders of the University of Georgia's system of regents." He proposed as a remedy a "Georgia plan for Georgia farmers" and added that for "too long most of our professional and scientific energies have been turned to production, while the importance of farm marketing and product consumption has been neglected."

He stated that, on the other hand, the men and women serving agriculture in leadership positions are "muzzled by an iron curtain of censorship." He suggested that serious consideration be given to setting up the university system as a state department with an executive officer and possibly others elected by voters.

USDA Issues Poultry Inspection Folder

WASHINGTON — "Poultry Inspection—a Consumer's Safeguard," a six-panel folder issued recently by the U.S. Department of Agriculture, explains and illustrates the federal poultry inspection program.

The folder carries pictures of the round U.S. inspection mark for poultry and some typical packages of poultry and poultry products bearing the mark. It also shows some scenes in a poultry processing plant operating under federal inspection.

A mandatory poultry inspection law has been in effect since January, 1959. This law provides that plants processing poultry and poultry products for sale in interstate or foreign commerce must operate under federal inspection.

The folder also explains some of the labeling requirements for poultry packed under federal inspection.

Single copies of the publication, PA-299 (Revised Oct. 1959) may be obtained free from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

Loans Approved for Feed and Grain Firms

WASHINGTON — Small business loans were approved for 12 feed, grain and related firms during October, according to the Small Business Administration.

Loans approved follow: Greeley (Iowa) Mill & Elevator, $80,000, feed mill; Langren Seed Co., Whiting, Iowa, $84,000, grain storage; Tabor (Iowa) Feed Plant, $17,500, livestock feeds, and White Pigeon (Mich.) Feed & Grain, $25,000, feed mill and farm supplies.

W. W. Decell Feed Mill, Wesson, Miss., $15,000, custom feed mixing; Monnett (Ohio) Supply Co., Inc., $125,000, grain storage; Tex-La Feed Mills Corp., Jasper, Texas, $150,000, manufacturing feedstuffs, and Shiner (Texas) Sheller & Feed Co., $30,000, feed and seed dealer.

Diamond J. Feed & Cattle Co., Daingerfield, Texas, $85,000, animal feed dealer; Texas Sesame Growers, Inc., Paris, Texas, $100,000, field seeds dealer; H. J. Hughes Grain Elevators, Panhandle, Texas, $170,000, grain dealer, and Rathdrum Prairie Grain Co., Tekoa, Wash., $100,000, grain and fertilizer dealer.

INSPECTOR TRANSFERRED

STOCKTON, CAL. — Charles O. White, grain inspector, has been moved up to officer in charge at the U.S. Department of Agriculture's grain division office established recently at the Stockton Port District. He will handle all appeals on grain, rice and beans in the Stockton-Sacramento area. He was transferred from the San Francisco district office where he was stationed for the past 11 years. He was assistant to Carl Waalen before Mr. Waalen retired and recently worked under Murray Bell.

SHORT OF ROUGHAGE?

Turn to PAXCO DEHYDRATED CORN COB MEAL, as many feed suppliers have. Superior molasses carrier. Cattle like it, get real feeding value from it. Reliable source; stabilized prices. Write today to:

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P. O. Box 120 Phone 222 Paxton, Illinois

HIGHER QUALITY HEAT TREATED **HAMMERS**
Hammers direct from manufacturer of years' experience. Send your specifications or worn hammer. Quantity discounts on hammers and screens. Ask for prices.
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P. O. Box 7455 N. Kansas City, Mo.

DEVOLD — Serving Mills & Breeders for Over 30 Years
Devolkod ® Vitamin Oils (Fortified Cod Liver Oils)
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Devold Vitamin A & D Feeding Oils
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BURROWS WEIGH-BURRO NEWS BURROWS
Weigh-Burro Speeds Mixing 600 Per Cent

Mr. Mervin Nauman, Manager of the Arlington Grain Company, Arlington, Illinois, finds many uses for his economical, rugged Weigh-Burro. Mr. Nauman says, "We use the Weigh-Burro to draw off bulk concentrate for mixing in home grown grain. We can draw out about 600 lbs. of concentrate and dump it in the mixer in about the time it takes to empty 100 lbs. of sacked concentrate in the mixer... We also have a grain bank program in which all grain is weighed in the Weigh-Burro prior to grinding."

You'll find that you too will save labor costs in handling bulk materials with the Weigh-Burro bulk scale. Delays are eliminated – the work goes faster. The Weigh-Burro's scale capacity is 1,000 lbs. Hopper bottom discharges instantly. Construction is rugged and durable. Easy rolling wheels. Price is only $295. Order yours today by collect wire or phone

$295

Scale Capacity . . . . . 1,000 lbs.
Width . . . . . 30"
Height . . . . . 38"
Length of Hopper . . . . . 46"
Front Bottom Dump Gate . . 8" x 14"
Front Wheels . . . . . 8" x 2"
Price $295

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Free Catalog

Your Burrows catalog contains complete specifications and prices on more than 1,000 important items. Includes grain grading information. Send for your free copy today.

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Speed King Feed Mill Machinery
Crusher Feeders • Crackers • Cob Crushers
Pneumatic Systems • Drags • Screw Conveyors
Feed Mixers • Corn Shellers • Hammer Mills
Burrs and Parts for All Makes of Attrition Mills
Repairs. Rebuilding. New Runner Heads
WINONA ATTRITION MILL CO.
1009 West Fifth St., Winona, Minn.

Future of Poultry, Egg Industries to Be Farm Bureau Topic

CHICAGO — A round table and a panel of poultry experts will tackle the problems of "What Future for the Poultry Industry?" and changes resulting from "Commercialization of the Egg Industry" at the annual Farm Bureau Poultry Conference to be held at the Morrison Hotel, Chicago, Dec. 14.

The round table, discussing "What Future for the Poultry Industry?" will be moderated by H. H. Alp, American Farm Bureau Federation director of market development. Round table participants include Hermon I. Miller, director, Poultry Division, USDA; Dr. Ralph L. Baker, professor of agricultural marketing, Pennsylvania State University, and Dr. O. A. Hanke, vice president, Watt Publishing Co. The participants will look to the future through the eyes of the federal government, a land grant college and an industry observer. The panel moderator will represent the nation's largest general farm organization.

The panel to discuss "Commercialization of the Egg Industry" will be headed by Stacey W. Cole, president, New Hampshire Farm Bureau and chairman, AFBF National Poultry Advisory Committee. Panel members include R. M. Hendrickson, poultry feeds marketing manager, General Mills, Inc., who will discuss "A Corporation Approach"; Pete Sikkema, egg division manager, Michigan Farm Bureau Services, who will talk about "The Cooperative Approach," and J. D. Sykes, vice president, Ralston Purina Co., who will appraise "The Integrated Approach."

The general public is invited to attend the Farm Bureau Poultry Conference, being held as a part of the 41st annual meeting of the American Farm Bureau Federation, Dec. 13-17.

400 at Open House For Ray Ewing Co.

PASADENA, CAL. — Nearly 400 friends of the Ray Ewing Co. gathered at the new plant and general offices here to celebrate open house activities. Visitors signed in from 13 states.

Complementing the decor of the company's offices is a collection of old prints of poultry and livestock. Nearly 250 of these full color prints are framed and on display throughout the office area. Some of the early prints were originally drawn on stone nearly 200 years ago and are of particular interest as a basis of comparison to the size and shapes of present day livestock. The poultry prints show many breeds which are now extinct. Ray Ewing began his collection years ago and has discovered many rare prints while traveling abroad.

Also, there is an entire wall of glass, porcelain, china and pottery "chicken-on-the-nest" pieces. Numbering over 750 different pieces, this collection ranges from miniatures to twice-life size and is valued in the thousands of dollars. Although there are over 750 chickens in the collection, no two are exactly alike.

DISTINGUISHED SERVICE RESOLUTION

HOLLYWOOD BEACH, FLA.—A resolution citing the late Ralph VanHoven for distinguished service to the National Renderers Assn. was adopted recently by the board of directors.

R. J. Fleming, president, read the resolution at NRA's 26th annual convention here, part of which is as follows: "Whereas Ralph VanHoven has rendered distinguished service to NRA during the past decade, serving as director, vice president and president; and whereas he traveled to Japan in behalf of the association representing us with skill and distinction, thereby raising our standing in a foreign country; and whereas through his sincerity and constructive leadership he has won the high esteem of his associates both present and past. . . ."

Flush Feeding Ewes Increases Lamb Crops

COLLEGE STATION, TEXAS — Flush feeding of range ewes before and during breeding slightly increased the percentage of lamb crops in field trials, according to a Texas agricultural experiment sub-station near Sonora.

Seven cooperating ranchmen supplied 2,238 ewes for observation. Of these, 1,428 served as controls and 810 were fed an average of 26 lb. of cottonseed pellets for a 52-day period. Feeding began 21 days before the initial date of breeding and continued until 31 days following this date. The feeding trials were conducted during August, September and October, 1958.

The increase in lamb crops the following spring ranged from 0-20%. The greatest response was with aged ewes in medium flesh.

There were fewer dry ewes among those flushed and their lambs appeared to be more uniform in age than the lambs from the control groups.

Shipment of Feeds Rises in Canada

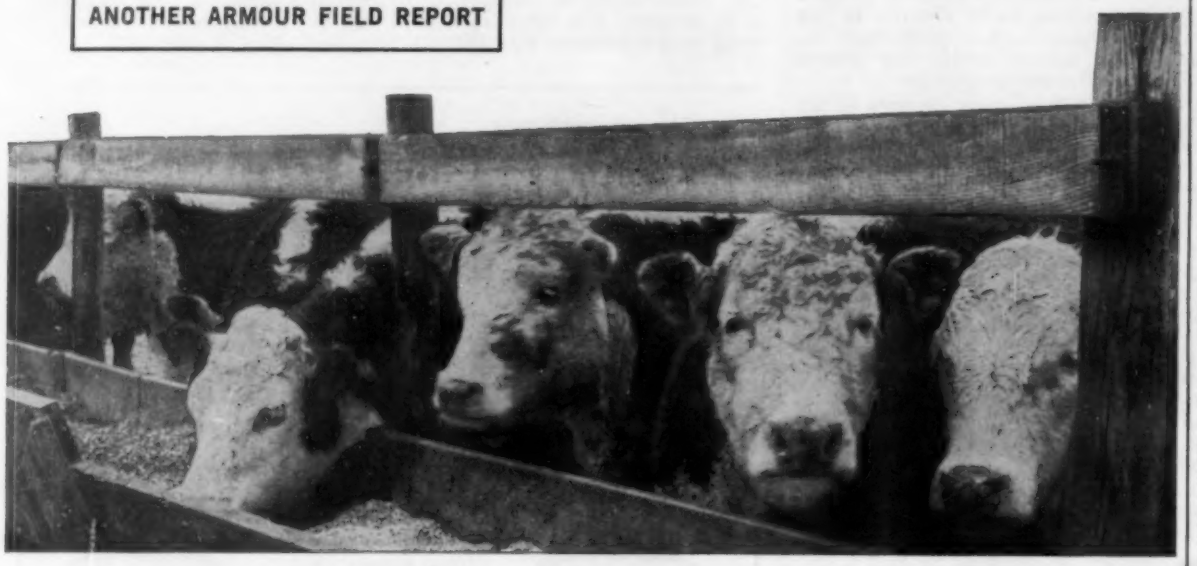
WINNIPEG—Shipments of all prepared stock and poultry feeds in Canada were larger in January-September this year than last, while September shipments were small, according to figures recently released by the Dominion Bureau of Statistics.

Nine-month shipments of primary or concentrated feeds advanced 9% to 340,402 tons from 312,292 a year ago, secondary or complete feeds 5.4% to 1,913,553 tons from 1,816,031, and all other animal feeds 6.7% to 415,487 tons from 389,465. September shipments: Primary feeds, 34,997 tons (35,884 a year earlier); secondary feeds, 205,335 tons (217,577), and all other animal feeds, 48,419 tons (48,805).

CO-OP PLANS PLANT

ASHLAND, ORE.—Plans for construction of a complete new plant here have been announced by the Grange Cooperative of Central Point. A concrete building, 74 ft. wide by 120 ft. long, will be the largest building in the co-op's new plant. It will provide interior space for a retail store 28 ft. wide and 60 ft. long, with the balance of the main building used to warehouse feed manufactured at the Central Point mill as well as fertilizers, and other farm supply products.

ANOTHER ARMOUR FIELD REPORT



Max Rosenstock, Idlewild Farm, Kingsley, Iowa finds DYNAFAC improves grade, practically eliminates feedlot bloat and founder, keeps cattle on feed better!

Max Rosenstock and his partner, Clarence Voss, have been feeding DYNAFAC for the past two years:

"It looked like a good product," they said. "We felt it deserved a fair trial under actual feedlot conditions. After testing it, we were so completely satisfied, that DYNAFAC is now a standard part of our feeding program."

"Dynafac gives us a number of direct benefits," says Mr. Rosenstock. "Since we started feeding it, we've had no trouble with bloat, and cattle stay on feed better—even with a high grain ration. The carcass quality of our animals is much higher, and they grade higher."

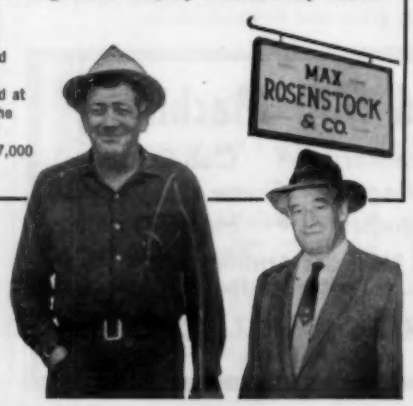
"When you add this to an average daily gain of 2.6 to 2.7 lbs. over a two-year period, you can see why we're sold on Dynafac!"

Mr. Rosenstock and Clarence Voss are only one example of the many progressive feeders who are switching to Dynafac. They represent a large and growing market for this proven feed additive.

Dynafac's big promotional program is designed to help you get your share of this business. Plan to add Dynafac to your formulas and concentrates. Write for prices and complete facts.

In 16 separate tests, in 6 states, averaging over 60 head per test, Dynafac showed a positive advantage sixteen times. Increase in daily gains ranged from 0.12 to 0.75 lbs. per head — averaged 0.32 lbs./day in favor of Dynafac feeding.

Max Rosenstock and Clarence Voss have 4,000 cattle on feed at all times. During the year, they turn out between 6,000 and 7,000 head of cattle.



DYNAFAC PREMIX

A product of Armour and Company, Chicago 90, Ill.

Distributed nationally by McKesson & Robbins, Inc.

EXPORTS

(Continued from page 1)

has fallen off. And there have been indications that buyers over there are willing to cancel out on some of the high protein meals they contracted for a month or so ago.

A source in the southeast reports that exporters believe the European drouth situation has been taken care of. Many of these exporters believe sizable tonnages of export meal will come back on the market during the months of January, February and March.

Off the Deep End?

There has been more of an inclination on the part of some well informed people in the trade to feel that Washington may have gone off a little on the deep end in its optimistic anticipation of a soybean crush equal to last season's of around 400 million bushels.

Inspections of soybeans for export are running currently about 3 million bushels ahead of last year's on the same date—and this in turn gives color to the official guess that 125 million bushels will find their way into foreign markets this crop year. And if they do, it could be that less meal would be available in domestic markets.

The most popular theory currently is that European buyers have imported from the U.S. all the ingredients they need for the time being. It could be that the Europeans are holding off, with the idea that soybean meal prices will make significant drops.

Now for another "but." Some say speculative interest in the foreign influence on the soybean market is still keen. And some traders believe exports this crop year will come closer to 145-150 million bushels than 125 million.

Meal Disappearance

The government reports rapid disappearance of meal in spite of crushing going along at a record pace. While soy and cotton meal production in October exceeded that of October, 1958, by 59,000 tons, end of October stocks were 7,000 tons less.

Dr. T. A. Hieronymus, University of Illinois grain marketing economist, said recently that export prospects for American feed grains, soybeans and soybean meal during the coming year were greatly improved, but the chances of selling more wheat or fats and oils overseas are not so favorable as they were last year.

The drouth-battered crop situation in Europe isn't the only factor affecting overseas demand for our feeds, according to Dr. Hieronymus. He says many foreign countries are increasing their emphasis on animal agriculture in an attempt to upgrade food quality and quantity.

Whatever lies ahead, it appears that for the present, anyway, export interest has slowed up some. It could be, however, that the sleeping dog will get up and bark just as loud as ever.

DENY CHARGES

(Continued from page 7)

sistant vice president, comptroller and sales manager, respectively.

Principal allegations in the complaints were these:

Southwestern, Czarnikow, J. H. Leftwich & Co., Molasses Trading, New Mexico Timber, Molasses Products and Standard Molasses were alleged to have illegally conspired in fixing identical delivered prices, coercing independent competitors to abide by them and dividing territories and accounts among themselves.

And it was charged that Southwestern, Industrial, National, Molasses Products and Imperial carried out the unlawful price-fixing and division-of-market activities through "Midwestern Terminals," a joint operation ostensibly formed for legitimate purposes.

Southwestern and another subsidiary, Compania de Mieles de Mexico, S.A., Balderas, Mexico, were said to have conspired to prevent a domestic competitor of the parent from buying blackstrap molasses in Mexico.

Southwestern allegedly intimidated competitors to maintain its fixed prices, refused to sell to price cutters, required truckers to pay "kickbacks," and granted favored customers a discriminatory discount of from ¼@½¢ gal.

Cited in Complaints

The complaints also cited Abraham I. Kaplan and Peter Berdeshevsky as officers of Southwestern and each subsidiary, and Lutz H. Frieler and Stanley J. Posner as secretary-treasurer and an employee, respectively, of Southwestern. According to the answers, Mr. Kaplan died last May 15 and his first name was "Abram," not "Abraham"; Mr. Berdeshevsky sev-

EXTENSION AWARD—Harry G. Russell (second from left), livestock specialist at the University of Illinois, received a $1,000 extension award established this year by Chas. Pfizer & Co., Inc., in cooperation with the American Society of Animal Production. He received the award and plaque during the society's annual meeting in Chicago. (Feedstuffs, Nov. 28) Congratulating Mr. Russell for his contributions to animal agriculture are (left to right): Dr. H. G. Luther, scientific director of agricultural operations for Pfizer; Mr. Russell; W. M. Reynolds, general manager of the firm's agricultural research center near Terre Haute, Ind.; Dr. W. M. Beeson, director of the extension awards program for the American Society of Animal Production, from Purdue University, and Dr. W. P. Garrigus, president of the national society, from the University of Kentucky.

TOP OF THE HOPPER

(Continued from page 2)

tention. And it is reported that some soybean processors, as well as others, are working on processes for preparing the full-fat product. However, some of these processors feel that use of unextracted soy meal will be strictly a matter of economics. When the soybean oil price is low enough, they say, use of the product may be economical. But when oil prices are high, the unextracted beans will be a doubtful commodity.

THE AVAILABILITY OF HAY wafering or pelleting equipment for farm or field use apparently is at least some time off. A copyrighted report from American Agricultural Reports said a survey of major farm equipment manufacturers indicated that it may be two to five years before "pelleting" equipment for farmers will be on the market in quantity. One reason, it is said, is that the present demand for wafering machines is not great enough—that is, it is not great enough at the price which a wafering unit would now cost. Nutritional questions also need further clarification. When field wafering units do reach the market, the report said, the capacity probably will be 5 to 7 tons per hour.

"THERE IS NOTHING ominous about feeds being chemicals," said Norman Foster of the Food & Drug Administration office at Minneapolis in a talk at Western convention. "Everything is made of chemicals."

And, quite coincidentally, while he said those words The Des Moines Register was running off on its presses an editorial about popular concern over food additives, pesticides and weed killers.

Said the Register: "... It's well not to be an alarmist just because a chemical substance is used in connection with food. Ordinary table salt is a chemical (sodium chloride) widely added to food and it has no known harmful effects for most persons. Millions of persons drink water to which fluorides have been added or in which they occur naturally. . . ."

ered all connections with the companies Oct. 8, 1957, and Mr. Frieler ceased being a Southwestern official June 10, 1957, and is merely an employee.

Further assertions in various answers are that Molasses Products and Nemtico are no longer doing business, that the FTC Act does not apply to Southwestern's Mexican subsidiary and that this subsidiary was not properly served.

Also, Industrial and National deny being business affiliates or "satellites" of Southwestern.

All respondents deny the alleged illegal activities, and most of them ask dismissal of the charges.

ACTIVE YEAR

(Continued from page 6)

same price, and it also looks for a large corn take-over. "The government will need storage space for corn," Mr. Haspray said.

Corn probably will be slow moving because of the late harvest, but CSS believes movement "will be reasonably active" and the government will be able to "clean much of the corn out of position."

According to Mr. Haspray, CSS prefers that grain be stored in country bins where local need exists. "This helps the local economy—and the local producer," he said. "The best position is in the country elevator . . . If expansion is needed this year, we feel it should be at the country level."

He observed that transit corn is not as flexible as country corn, "but we still need some terminal storage."

Harold Brightwell advised grain men to make space decisions on local needs.

Noting that 225 million bushels of corn were under support Aug. 1, he said this situation leaves three alternatives: (1) The government will have to move 100 million bushels, (2) farmers will repay loans or (3) additional storage will have to be found.

"You know that if you don't provide additional storage, somebody else will," he said.

STILBESTROL

(Continued from page 1)

study information on the effects of stilbestrol on human health, including an analysis of case histories since stilbestrol has been used in medicine.

Earlier, the use of additives and the cancer question had received widespread attention in newspaper columns written by Drew Pearson.

N.Y. SENATOR

(Continued from page 1)

to be cancer-producing by researchers. When offered for sale, such meat would be required to bear a tag informing the consumer that the product being purchased came from animals fed the additives.

The same general provisions would apply to cattle and poultry raised within the state.

All breeders and processors within the state would be required to certify to the State Health Department which additives if any were used in feeding their livestock. The in-state produced food would also require the informative tag in order to be sold.

Sen. Glinski's bill also would require a tag on products from cattle and poultry which were not fed additives.

AFMA AWARD

(Continued from page 1)

phorus and the role of fat in mineral utilization.

He attended Southwestern Louisiana Institute, Louisiana State University and Pennsylvania State University, where he was awarded B.S., M.S. and Ph.D. degrees, respectively. During World War II, he served with the Chemical Warfare Service and the U.S. Navy. During the next six years he served on the faculties of Pennsylvania and Louisiana State Universities, and joined the staff of Oklahoma State University in 1952.

In 1956, Dr. Tillman took leave to serve as a research scientist at the Oak Ridge Institute of Nuclear Studies. This led to an appointment as biological consultant for the radiation laboratory at Oklahoma State University, and to his selection as general chairman of the 4th Conference on Isotopes in Agriculture. Dr. Tillman was also selected as a member of the Animal Husbandry Exchange Team, sponsored by the U.S. Department of Agriculture, to visit Russian research institutes and collective farms early this year.

Dr. Tillman is the 12th member of the American Society of Animal Production to receive the AFMA award since 1948.

Each year, AFMA provides three $1,000 awards to outstanding men of science. Previous winners this year were: Dr. Harry R. Conrad, Ohio Agricultural Experiment Station, selected by the American Dairy Science Assn. at its meeting last June, and Dr. Hans Fisher, Rutgers University, selected by the Poultry Science Assn. at its meeting in August. All three scientists will be given additional recognition at the 52nd annual meeting of AFMA in Chicago, May 9-11, 1960.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand and supply steady; 400 D, 3,000 A 21½¢ lb.; 300 D, 3,000 A 21¢; 300 D, 2,250 A 19½¢; 300 D, 1,500 A 18¢; 300 D, 750 A 16¢; 75 D, 750 A 15½¢.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7½¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 32¢ lb.; 300 D, 2,250 A 16¾¢ lb.; 300 D, 1,500 A 15½¢ lb.; 300 D, 750 A 14¢ lb.

New York: Demand and supply good; trend firm; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 16½@17¢, 2,250 A 17½@20¢, 3,000 A 19@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Denver: Demand fair; trend steady; supply ample; 2,250 A, 300 D 22¢ lb., f.o.b. Denver.

ALFALFA MEAL

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $63.50.

Cincinnati: Demand fair; trend higher; supply adequate; 17% dehydrated, 100,000 vitamin A, bulk pellets $66.

Philadelphia: Demand slow; trend unsettled; supply fair; 17% dehydrated $72.75, bagged.

Portland: Demand good; supply ample; trend unchanged; suncured, 15% $50, sacked; dehydrated $66.40, sacked.

New Orleans: Demand fair; trend steady; supply adequate; vitamin A, 17% $66@67, sacked; pellets $64@65, sacked.

Ft. Worth: Demand fair; supply sufficient for dehydrated; light offerings of suncured; sacked: dehydrated, 17%, 100,000 A $65.80 rail, $66 truck; suncured, 13% ¼-in. grind No. 1 $48@50, truck or rail.

Omaha: Demand slow; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk, pellets $54; sacked meal $59, Omaha basis.

Chicago: Demand fair; trend steady; supply adequate; 17% protein, 100,000 units vitamin A guaranteed $60.50@61.50.

Boston: Demand fair; supply adequate; dehydrated 17% $70; suncured 13% $43.

Minneapolis: Demand good; supply steady; no change in price from last week; 17% dehydrated, 100,000 units vitamin A reground pellets $60, oiled reground pellets $62; sacks $4 more.

Buffalo: Demand and supply fair; trend steady to higher; $73.50, sacked, Boston.

Seattle: Demand fair; trend steady; supply good; 15% protein suncured $45, 136,000 A unit dehydrated $68, both sacked, delivered, truck loads.

Denver: Demand good; trend strong; supply ample; dehydrated $52, sacked meal; $50, bulk pellets.

Kansas City: Demand slow; trend steady to firm; supply adequate; dehydrated alfalfa with 17% protein and 100,000 units vitamin A guaranteed on arrival: reground pellets $59, sacked; pellets $54, bulk; meal with 18% protein and 125,000 units vitamin A $63, sacked; meal with 20% protein and 150,000 units A $69, sacked; suncured meal demand slow with supply adequate and prices steady, No. 1 fine ground $43@43.50, sacked; No. 1 ¼-in. $38@39, No. 2 ¼-in. $36.50@37.50, sacked.

Los Angeles: Demand steady; trend firmer; supply adequate; dehydrated meal, 17% protein, 100,000 A $52.50@53; dehydrated pellet meal, 17% protein, 100,000 A $54.50@55; suncured meal, 15% protein $46@47; suncured crumbles, 15% protein $48@49.

St. Louis: Demand slow; trend firm; supply ample; suncured, 13% fine, sacked $46; dehydrated, 17%, 100,000 A pellets, demand slow, trend steady, supply ample, bulk $59.

ANIMAL FATS (STABILIZED)

Chicago: Demand and supply fair; trend firm; bleachable fancy tallow $6.12½ cwt.; yellow grease $6 cwt.

New Orleans: Demand fair; trend easy; supply adequate; 6@6½¢ lb., tank cars.

Ft. Worth: Demand good; supply scarce; prime tallow, tank cars 6¢ lb.; drums 8½¢ lb., f.o.b. north Texas packing plants with returnable drums.

Ogden: Supply normal; $5.50 cwt.

San Francisco: Demand fair; supply ample; bleachable fancy 6¼¢ lb.; yellow grease 5½¢ lb.

Louisville: Demand fair; trend easy; supply good; bleachable white $120; white tallow $130; yellow grease $116.

Boston: Demand slow; supply plentiful; tallow 6¼¢ lb.; yellow grease 5¼¢ lb.

St. Paul: Demand good; supply ample; heavy production responsible for further reduction in price, which this week, at 5¾¢ lb., f.o.b. producer's plant, is ⅛¢ lower than last week.

Atlanta: Demand fair; trend steady; supply ample; 5¢ lb., f.o.b. Georgia and Alabama producing mills.

BARLEY FEED

Chicago: Demand good; trend steady; supply fair; $36, sacked.

Baltimore: Demand fair; trend firm; supply ample; $46.50, sacked.

Philadelphia: Demand slow; supply fair; $46.50, sacked.

New Orleans: Demand slow; trend unchanged; supply ample; $50@51, sacked.

Portland: Demand slow; supply ample; trend unchanged; rolled $56, ground $54, both sacked.

Ogden: Supply normal; rolled $48@53; whole barley $43@48, sacked.

San Francisco: Demand fair; supply ample; rolled $61; ground $60, sacked.

Boston: Demand slow; supply fair; $47.50, sacked.

Denver: Demand good; trend firm; supply ample; rolled $2 cwt.

Seattle: Demand fair; trend steady; supply good; $48, truck loads.

Los Angeles: Demand slow; trend weaker; supply ample; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton, carlots: 80 granular $31.30; less than carlots $40; 200 mesh fine $31; less than carlots $40.

Chicago: Demand fair; trend steady; supply ample; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh, fine $13.25 net.

Denver: Demand fair; trend steady; supply ample; $24.50, sacked, f.o.b. Denver.

BLOOD FLOUR

Louisville: Demand slow; trend strong; supply good; $82.50@87.50, sacked.

BLOOD MEAL

Omaha: Demand and trend strong; supply fair; 80% $95, sacked, Omaha basis.

San Francisco: Demand fair; supply ample; $6 a unit of ammonia.

Chicago: Demand good; trend steady; supply fair; 100-lb sacks, guaranteed 80% protein $117.50.

Ogden: Supply average; $92.50 ton in 100-lb. bags, f.o.b. Ogden.

New Orleans: Demand dull; trend steady; supply ample; $80@85.

Portland: Demand good; supply ample; trend unchanged; $115.

Louisville: Demand slow; trend strong; supply good; $82.50@87.50, sacked.

Los Angeles: Demand slower; trend unchanged; supply adequate; $5.50 a unit of ammonia, sacked.

BONE MEAL (STEAMED)

Louisville: Demand dull; trend stronger; supply ample; $82.50@87.50, sacked.

Ft. Worth: Demand good; supply light; $90, sacked, f.o.b. Ft. Worth, local manufacture.

San Francisco: Demand good; supply ample; $75, sacked.

Chicago: Demand good; trend firm; supply ample; 100-lb. sacks $100.

New Orleans: Demand fair; trend steady; supply ample; $80@85, sacked.

Portland: Demand good; supply ample; trend unchanged; $102, sacked.

Cincinnati: Demand fair; trend steady; supply good; $100, sacked, Cincinnati.

Boston: Demand steady; supply light; $105, sacked.

Los Angeles: Demand slow; trend unchanged; supply tighter; imported $80, 20-ton lots, sacked.

Buffalo: Demand good; trend steady; supply limited; $105, sacked.

Seattle: Demand good; trend firm; supply limited; $90, sacked, ex-dock, truck lots.

BREWERS DRIED GRAINS

Chicago: Demand good; trend firm; supply fair; $47.

San Francisco: Demand fair; supply ample; $54, sacked.

Cincinnati: Demand poor; trend higher; supply limited; $52.50, sacked.

Philadelphia: Demand and supply fair; trend unsettled; $64, sacked.

New Orleans: Demand fair; trend firm; supply good; $48@49, sacked.

Ft. Worth: Demand fair; supply scarce for nearby shipment; 26% protein $55@56, December.

Louisville: Demand good; trend strong; supply fair; $52, sacked.

Boston: Demand active; supply tight; 26% $55, bulk; 24% $53.50, bulk; 22% $59, sacked.

Los Angeles: Demand slow; trend unchanged; supply adequate; $50.

Buffalo: Demand fair to good; supply fair; trend steady; $57.50, Boston.

St. Louis: Demand good; trend steady; supply light; $46.

BREWERS DRIED YEAST

Omaha: 10½¢ lb., sacked.

San Francisco: Demand fair; supply good; 10¢ lb.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9⅝@12¼¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10@11¢ lb., carlots, sacked; 10½@12¼¢ lb., ton lots.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Cincinnati: Carlots 11¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., sacked.

Louisville: Demand fair; trend steady; supply good; $200@210, sacked.

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb., sacked.

Boston: Demand and supply steady; 11¢ lb., sacked.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Denver: Demand light; trend steady; supply ample; 8¢ lb., f.o.b. Golden, Colo.

Los Angeles: Demand slow; trend unchanged; supply adequate; 10¢ lb. 5-ton lots; 11¢ lb. 1-ton lots; 12¢ lb. less than ton lots, all sacked.

Buffalo: Demand fair; trend steady; supply ample; $9.65 cwt., sacked.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

BUTTERMILK (CONDENSED)

New Orleans: Demand slow; trend unchanged; supply adequate; $4.25@4.30 cwt.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

Ogden: Supply normal; $4.40, 100-lb. drum.

San Francisco: Demand fair; supply good; $5 cwt.

Chicago: Demand good; trend steady; supply fair; $3.25@3.50 cwt., carlots.

Louisville: Demand dull; trend steady; supply nil; $4.25 cwt.

Boston: Demand and supply steady; 3.95¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb., 100-lb. lots; 4½¢ lb., 500-lb. lots; both in barrels.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $5.50.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100-lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Los Angeles: Demand slow; trend unchanged; supply adequate; flour $10.15, 20-ton cars; meal $11.15, 20-ton cars, both sacked.

Minneapolis: Fine grind, 50-lb. bags $12.25, 100-lb. bags $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, sacked, ex-warehouse, truck lots.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CHARCOAL

Chicago: Demand fair; trend firm; supply fair; carlots, 50-lb. multiwalls $110.

San Francisco: Demand steady; supply ample; $141.

Boston: Demand and supply steady; $110.

Los Angeles: Demand fair; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots, both sacked.

COCONUT OIL MEAL

Portland: Demand slow; supply limited; trend unchanged; $78.50.

San Francisco: Demand good; supply tight; $67.50.

Seattle: Demand fair; trend firm; supply limited; $84, sacked, delivered, truck.

Los Angeles: Demand slow; trend unchanged; supply adequate; copra cake $72.

COD LIVER OIL (FORTIFIED)

Boston: Demand and supply steady; 600 D, 2,250 A 20½¢ lb.; 300 D, 3,000 A 22¢; 300 D, 2,250 A 20¢; 300 D, 1,500 A 18½¢; 600 D, 1,500 A 19¢.

New York: Demand and supply good; trend firm; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

New Orleans: Demand light; trend easy; supply normal; 50% solid $50@55, f.o.b. Gulf.

Boston: Demand and supply good; 4¾¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 3½¢ lb.

Denver: Demand poor; trend steady; supply ample; dried $147, sacked, Denver.

New York: Demand poor; trend steady; supply tight; 2¾¢ lb., f.o.b. eastern shore.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $52.90, meal $64.90.
Atlanta: Feed $58.98, meal $70.98.
Birmingham: Feed $57.64, meal $69.54.
Boston: Feed $57.84, meal $69.84.
Chicago: Feed $46, meal $58.
Cleveland: Feed $54.14, meal $66.14.
Denver: Feed $56.51 meal $68.51.
Ft. Worth: Feed $54.96, meal $66.96.
Indianapolis: Feed $51.36, meal $63.36.
Kansas City: Feed $46, meal $58.
Louisville: Feed $53.21, meal $65.21.
New Orleans: Feed $56.20, meal $68.20.
New York: Feed $58.43, meal $69.43.
Norfolk: Feed $56.71, meal $68.71.
Philadelphia: Feed $57.02, meal $69.02.
Pittsburgh: Feed $54.96, meal $66.96.
St. Louis: Feed $46, meal $58.
Decatur, Ill.: Feed $39.75, meal $54.75.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $47.

Louisville: Demand dull; trend steady; supply light; $55.45, sacked.

COTTONSEED OIL MEAL

Cincinnati: Demand poor; trend steady; supply somewhat limited; $71, sacked.

Philadelphia: Demand slow; trend unsettled; supply light; $78, sacked.

Memphis: Demand poor; trend lower; supply ample; prime 41% protein, old process $61.50; new process, 41% solvent $60.

Wichita: Demand good; supply insufficient; 41% old process $78.50, sacked.

Ft. Worth: Demand fair; supply sufficient; 41% old process $68; solvent, 1% fat added $69.90, December-January; $68.60, February; pellets $2 additional; cottonseed hulls $14@16.

Omaha: Demand slow; trend easy; supply ample; 41% solvent $68.70, delivered Omaha.

Chicago: Demand and supply fair; trend steady; Memphis, hydraulic $63, solvent $61.

New Orleans: Demand good; supply adequate; trend steady; $79.50@80.

Ogden: Supply normal; 41% $75@80.

Portland: Demand slow; supply limited; trend unchanged; $75, sacked.

San Francisco: Demand good; supply tight; 41% $69; 44% $73.

Louisville: Demand slow; trend easy; supply good; old process $71, new process $70, both sacked.

Boston: Demand fair; supply light; $85.

Buffalo: Demand poor; trend steady; supply adequate; $86, sacked, Boston.

Denver: Demand fair; trend steady; supply fair; 2% $69.40, Denver.

Los Angeles: Demand fair; trend unchanged; supply adequate; $72.

St. Louis: Demand slow; trend easy; supply adequate; solvent $64.

Seattle: Demand good; trend firm; supply limited; 41% expeller process $77, delivered, truck lots.

Kansas City: Demand slow; trend steady; supply ample; old process meal $66.50@66, sacked, Memphis; solvent $63.50@64.

Atlanta: Demand fair; trend weak; supply good; 41% $63@66, Georgia and Alabama producing mills.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

New York: Demand and supply good; trend firm; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Cincinnati: 18% phosphorus $81.02; 13% phosphorus $63.96, f.o.b. Cincinnati.

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12% $53, f.o.b. Tupelo in 100-lb. multiwall bags, $50 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Coronet, Fla.: Carload, bagged $66.25 and bulk $63.25; truck load, bagged $67 and bulk $64, f.o.b. Coronet, Fla.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston; 100-lb. multiwall bags $71.35, bulk.

DICALCIUM PHOSPHATE

Portland: Demand good; supply ample; trend unchanged; $115, sacked.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Columbia, Tenn: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Carload and truckload, bagged $80.50, bulk $77.50, f.o.b. Texas City, Texas.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $86 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices: for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Denver: Demand fair; trend steady; supply ample; $8.50, sacked, f.o.b. Texas City.

DISTILLERS DRIED GRAINS

San Francisco: Demand fair; supply ample; solubles $85, sacked.

Philadelphia: Demand slow; supply light; $69, sacked.

Louisville: Demand good; trend steady; supply ample; bourbon grains: light $57, dark $58, solubles $77, all sacked.

Boston: Demand fair; supply tight; dark, sacked $66.50; light, sacked $65.50.
Buffalo: Demand good; trend steady to higher; supply poor; $66, Boston.
Seattle: Demand good; trend firm; supply limited; $68.50, sacked, delivered, truck lots.

DRIED BEET PULP

New Orleans: Demand fair; trend steady; supply adequate; $51@52, sacked.
Portland: Demand good; supply ample; trend unchanged; $56.40, sacked.
Ogden: Supply normal; $41@46.
San Francisco: Demand good; supply fair; $42.80.
Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $51.70, December, delivered Ft. Worth.
Boston: Demand and supply steady; $50.50, sacked.
Seattle: Demand good; trend steady; supply limited; $50, sacked, delivered, carlots.
Los Angeles: Demand steady; trend unchanged; supply ample; $47.40@48.50.
Buffalo: Demand fair; trend steady; supply adequate; $51, sacked, Boston.
Denver: Demand excellent; trend very strong; supply slightly shorter; $32, Denver.
Atlanta: Demand fair; trend steady; supply good; $53.75, sacked, delivered.

DRIED BUTTERMILK

New Orleans: Demand fair; trend steady; supply ample; $12@13 cwt.
Chicago: Demand improved; trend higher; supply light; medium acid $12@12.25 cwt., sacked, nominal; sweet cream $12.50@12.75 cwt., sacked, nominal.
San Francisco: Demand fair; supply ample; 11½¢ lb.
Louisville: Demand dull; trend steady; supply ample; $245@250, sacked.
Boston: Demand good; supply short; 14¢ lb.
Los Angeles: Demand slow; trend unchanged; supply adequate; 12¢ lb., sacked.

DRIED CITRUS PULP

San Francisco: Demand and supply fair; meal $49, sacked.
New Orleans: Demand fair; trend easy; supply normal; $32.50@35, sacked, f.o.b. Florida points.
Boston: Demand slow; supply adequate; $52, sacked.
Los Angeles: Demand good; trend stronger; supply limited; orange pulp $43; lemon pulp $42.
Buffalo: Demand and supply fair; trend steady; $31, sacked, f.o.b. Florida points.
Atlanta: Demand good; trend steady; supply limited; $31@32.50, sacked, f.o.b. Florida producing plants.

DRIED SKIM MILK

Cincinnati: Demand fair; trend steady; supply adequate; 11@11½¢ lb.
Philadelphia: Demand slow; supply fair; $12.50 cwt., sacked.
Chicago: Demand good; trend higher; supply light; $12.50@13 cwt., sacked, nominal.
Minneapolis: Scarce supply; demand good; trend steady; $13.75 cwt., sacked.
New Orleans: Demand slow; trend unchanged; supply ample; $13@13.50 cwt.
Portland: Demand good; supply ample; trend unchanged; 13¢ lb.
San Francisco: Demand and supply fair; 13½¢ lb.
Louisville: Demand slow; trend steady; supply ample; $260@270, sacked.
Ogden: Supply normal; $15.15, 100-lb. drum.
Boston: Demand active; supply tight; 13¢ lb., nominal.
Los Angeles: Demand slow; trend unchanged; supply adequate; 14¢ lb., less than ton lots; 13¾¢ lb., ton lots; both sacked.

DRIED WHEY

Minneapolis: Demand good, but supply very scarce; price slightly higher at $5.55 cwt., sacked.
Ogden: Supply normal; $6, 100-lb. bag, sacked.
New Orleans: Demand good; trend easy; supply ample; $6@6.50 cwt.
Louisville: Demand slow; trend steady; supply ample; $130, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $6 cwt., sacked, Cincinnati.
Portland: Demand good; supply ample; trend unchanged; $6.80 cwt.
Philadelphia: Demand slow; supply fair; $6.50 cwt., sacked.
Chicago: Demand fair; trend steady; supply ample; $5.75@6 cwt., sacked.
Wichita: Demand light; supply ample; $6.50 cwt., sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard $6, sacked, delivered Ft. Worth; $6.25 ton lots, f.o.b. warehouse Ft. Worth.
San Francisco: Demand steady; supply good; $5.75 cwt.
Boston: Demand and supply steady; 6¢ lb.
Los Angeles: Demand slow; trend unchanged; supply adequate; $5.93 cwt., carloads; $6.23 cwt., l.c.l., both sacked.
Denver: Demand fair; trend steady; supply ample; $6.50 cwt., sacked.
Seattle: Demand and trend steady; supply good; $6.40 cwt., sacked, ex-warehouse, l.c.l.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand slow; supply sufficient; 85% to 87% protein $73@76, sacked, f.o.b. trucks north Texas plants.
Boston: Demand steady; supply tight; $80, sacked, f.o.b. Maine.
Los Angeles: Demand slow; trend unchanged; supply adequate; $1 a unit of protein, sacked.
Ft. Worth: Demand slow; supply sufficient; 85%-87% protein $72.50@75, sacked, f.o.b. trucks, north Texas plants.
Atlanta: Demand good; trend steady; supply very limited; $72.50@75, f.o.b. Georgia and Alabama producing mills.

FISH MEAL

Minneapolis: Demand fair; supply ample; Gulf menhaden $145, sacked; 60% blended $140@145, sacked; 70% herring $145, sacked; $1.70 a unit, f.o.b. West Coast.
San Francisco: Demand slow; supply ample; $1.70 a unit of protein.
Ft. Worth: Demand poor; supply limited; 60% menhaden $126, sacked, delivered Ft. Worth.
Omaha: Demand and trend fair; supply ample; 60% menhaden $135, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $145, sacked.
Portland: Demand slow; trend lower; supply ample; $1.70 a unit.
New Orleans: Demand dull; trend easy; supply ample; menhaden, 60% $127.50@130, sacked; scrap $124@126, sacked, f.o.b. Gulf.
Louisville: Demand slow; trend easy; supply light; $145@150, sacked, nominal.
Chicago: Demand very unsettled; trend easier; supply liberal; ton, sacked: menhaden, eastern $115@118 nominal and scrap $111@114 nominal; Gulf, meal $117@120 nominal and scrap $113@116 nominal; Canadian herring meal $1.70 a unit of protein.
Ogden: Supply normal; $1.70 a unit, f.o.b. Coast; 65% $115@117.
Boston: Demand and supply steady; $130, sacked, f.o.b. Gloucester.
Denver: Demand poor; trend steady; supply ample; $1.85 a unit of protein, f.o.b. West Coast.
Buffalo: Demand just fair; trend easier; supply ample; 60% protein, menhaden $130 bulk, $135 sacked.
Los Angeles: Demand slow; trend unchanged; supply adequate; local production, 60% protein $1.80 a unit, sacked.
Atlanta: Demand very little; trend weak; supply good; 60% menhaden $115, sacked, Atlanta producing plants.

HAY

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy $24@25; No. 1 red clover $26@27; alfalfa-clover mixed $27.50; alfalfa, first cutting $32, second cutting $25; wheat or oat straw $18@20.
Philadelphia: Demand slow; supply light; $24@25.
Wichita: Demand heavy; supply short for prairie, sufficient for alfalfa; prairie $22, alfalfa $25@27.50, baled.
Portland: Demand good; supply ample; trend unchanged; $36.
Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; No. 2 prairie $24@26; No. 2 Johnson grass $22@24, delivered Texas common points.
Ogden: Supply normal; $1.25@1.35 a bale; $25 ton in the barn.
Louisville: Demand for hay slow, straw fair; trend of hay and straw steady; No. 1 hay, any variety of local $30@32, No. 2 $28@30; straw $20.
Boston: Demand slow; supply adequate; No. 2 timothy $40@42.
Los Angeles: Limited offerings with slow demand; U.S. No. 1 $36@37; U.S. No. 2 leafy $33@34; U.S. No. 2 green $34@35; U.S. No. 2 $30@31.
Denver: Demand fair; trend good; supply fair; $31 ton, new hay, third cutting, alfalfa baled.
Seattle: Demand good; trend steady; supply fair; U.S. No. 2 green alfalfa $39, delivered, truck lots.

HOMINY FEED

Memphis: Demand poor; trend steady; supply ample; white $41, yellow $41.
Cincinnati: Demand fair; trend steady; none available; $45, sacked.
New Orleans: Demand fair; trend easy; supply ample; $45.50@46.
Chicago: Demand fair; trend steady; supply ample; December shipment $42@43.
Louisville: Demand dull; trend easy; supply light; $48, sacked.
Boston: Demand cautious; supply plentiful; $50.50.
Seattle: Demand fair; trend steady; supply limited; $53, sacked, delivered, carlots.
Buffalo: Demand good; trend steady; supply fair; $53.50, Boston.
St. Louis: Demand slow; trend steady; supply limited; yellow $42.50.

LINSEED OIL MEAL

New Orleans: Demand slow; trend unchanged; supply ample; $88.50@89.
Minneapolis: Demand fair; supply adequate; $72@73 for December.
Omaha: Demand slow; trend easy; supply ample; 34% solvent $77.30, bulk; 32% old process $82.30, sacked, Omaha basis.
Cincinnati: Demand poor; trend higher; supply adequate; new process $72.50; old process $77.50, Minneapolis.
Wichita: Demand fair; supply sufficient; 34% $92.20, sacked.
Ft. Worth: Demand slow; supply limited; 34% protein: new process $87.50, truck; old process $93.50.
Portland: Demand slow; supply ample; trend unchanged; $88, sacked.
Philadelphia: Demand and supply fair; trend unsettled; 34% $95, sacked.
Chicago: Demand steady; trend firm; supply good; Minneapolis basis: solvent $72, expeller $77.
San Francisco: Demand fair; supply ample; $77.
Louisville: Demand slow; trend easy; supply fair; old process $95.50, new process $91, both sacked.
Boston: Demand slow; supply ample; $89.50.
Denver: Demand poor; trend steady; supply tight; $87.30, Denver.
Seattle: Demand fair; trend steady; supply limited; $90, sacked, delivered, car loads, 31% protein, California.
Los Angeles: Demand and trend steady; supply limited; local production, 31% protein $73.

LIVER AND GLANDULAR MEAL

Omaha: Demand fair; trend firm; supply tight; 65% $190, sacked, Omaha basis.

MALT SPROUTS

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $35.
Chicago: Demand good; trend firm; supply fair; $30.50.
New Orleans: Demand fair; trend easy; supply ample; $42@43.
Boston: Demand slow; supply limited; Canadian $48.50, sacked; domestic $48, sacked.

MEAT AND BONE MEAL

Cincinnati: Demand good; trend steady; supply fair; 50% meat and bone scraps $73.30, Cincinnati.
St. Paul: Demand fair; supply ample; down $2@3 from last week to $69@73, sacked.
Ft. Worth: Demand fair; supply normal; meat and bone, 50% $69, f.o.b. Ft. Worth.
Portland: Demand slow; supply ample; trend unchanged; $1.45 a unit of protein.
New Orleans: Demand slow; trend easy; supply ample; $84.50@86.
Chicago: Demand good; trend firm; supply fair; carlots, 50% protein, 100-lb. sacks $80.
Omaha: Demand and trend fair; supply ample; $72.50, sacked.
Ogden: Supply normal; $77.50, 50% protein, in 100-lb. bags.
San Francisco: Demand fair; supply ample; $1.55 a unit of protein.
Wichita: Demand good; supply sufficient; 50% $80, sacked, f.o.b. plant; 55%, no quotations, no offerings.
Louisville: Demand light; trend strong; supply good; $82.50@87.50, sacked.
Boston: Demand slow; supply ample; $1.15 a protein unit; converted 50% $70, sacked.
Seattle: Demand good; trend steady; supply ample; $80, sacked, ex-warehouse, 50% protein.
St. Louis: Demand good; trend weak; supply ample; $69.
Los Angeles: Demand good; trend firm; supply not too plentiful; 50% protein $1.65 a unit.
Buffalo: Demand just fair; trend easier; supply ample; 50% meat scraps $70 bulk, $75 sacked.
Denver: Demand good; trend steady; supply ample; 50% $67.50, sacked, truck lots; $64.50, bulk lots.
New York: Demand and supply fair; trend steady; 50% $67.50, 55% $75, bulk; 50% $70.50, 55% $78, sacked.

MILLFEED

Minneapolis: Demand good; supply ample; bran and middlings $38@39, red dog $41@42, both sacked.
Kansas City: Demand slow; trend easier; supply ample; bran $36.25@37, shorts $36.50@37.25, sacked; bran $32@32.75, shorts $33.50@34.25, middlings $33@33.75, bulk.
Wichita: Demand very good; supply about offsets demand; basis Kansas City; bran $37.50@38, shorts $38@38.50, both sacked.
Ft. Worth: Demand fair; supply sufficient; carlots, bran $43, burlaps $46; gray shorts $43.50, burlaps $46; bulk middlings $43, delivered Texas common points.
Chicago: Trade in millfeed was irregular during the week ending Dec. 2. Prices for both bran and standard midds. have advanced, while prices for red dog have declined to some degree. Quotations: Chicago basis, ton, carlots — standard bran $38.50@39.50, standard midds. $38.50@39.50, red dog $40.50@42.50.
Omaha: Demand poor; trend easy; supply ample; sacked, bran $38; sacked gray

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

shorts $38; bulk standard midds. $35.50, all Omaha basis.

Cincinnati: Demand poor; trend higher; supply adequate; bran and middlings $45.50, sacked.

St. Louis: Bulk bran $37@37.50; shorts $38.50@39, middlings $38@38.50.

Boston: Demand good; supply spotty; bran $50.50, middlings $51.50.

Buffalo: Millfeed back down last week in a strictly bran market. Scattered demand and wintry weather had sparked an advance here that spread elsewhere but the weather moderated and there was no follow through to the demand. Quotations Dec. 2: bulk bran $39.50@40, sacked $44@44.50; bulk middlings $40@41, sacked $44.50@45.50; bulk red dog $42@43.50, sacked $46.50@48.

Philadelphia: Demand slow; trend unsettled; supply fair; bran $53, standard midds. $54, red dog $58, all sacked.

New York: Demand good; trend steady; supply fair; bran $53@53.50, standard midds. $54@54.50, both sacked.

New Orleans: Demand good; trend easy; supply ample; sacked, bran $49@49.75, shorts $49@49.75; bulk, bran $45@45.75, shorts $47@47.75, middlings $47@47.75.

Louisville: Demand fair; trend strong; supply good; bran $48.60, mixed feed $49.10, shorts $50.10, middlings $52.30, all sacked.

Memphis: Demand fair; trend steady; supply ample; wheat bran $41.20, gray shorts $41.20, standard midds. $40.70.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $43, middlings $48; to Denver: red bran and mill run $50, middlings $55; to California: red bran and mill run $50.50, middlings $55.50, f.o.b. San Francisco and Los Angeles.

Seattle: Demand fair; trend easy; supply good; $39, delivered, common transit points, carlots.

Portland: Demand slow; trend lower; supply ample; $40.50, sacked.

San Francisco: Demand good; supply tight; $46.50; red bran $51.50.

Los Angeles: Standard mill run $45@46, demand slower, weaker trend, adequate supply; red bran $52@52.50, slow demand, firmer trend, adequate supply.

MINERAL FEED

Ogden: Supply average; $113 ton in 50-lb. blocks; $103 ton, granular, 50-lb. bags.

Ft. Worth: Demand fair; supply sufficient; all-purpose granules $90, block $97; mineral phosphorus 6% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3½% granules $87, phosphorus 3% $77 (in 50-lb. paper bags).

Wichita: Demand heavy; supply adequate; all-purpose with iodine, 50-lb. blocks $97.50, 100-lb. bags $92.50, f.o.b. plant.

Portland: Demand slow; supply ample; trend unchanged; $45, sacked.

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Denver: Demand fair; trend steady; supply ample; $100, sacked.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse, both sacked.

MOLASSES

Minneapolis: Demand good; supply adequate; trend steady; $31, tank truck, delivered.

New Orleans: Demand good; supply ample; trend steady; 10¢ gal., tank cars and trucks; 600-lb. customer's drum $7.16.

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Memphis: Demand poor to fair; trend steady; supply ample; blackstrap 10¢ gal., tank car, f.o.b. New Orleans, and $22.60 ton, delivered Memphis, truck.

Cincinnati: Demand fair; trend steady; supply adequate; 11¢ gal., New Orleans.

Ft. Worth: Demand good; supply sufficient; blackstrap 11¼¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $25.94, seller's market price on date of shipment.

San Francisco: Demand and supply good; $20, f.o.b. cars, Richmond, Cal.

Louisville: Demand slow; trend steady; supply normal; 10¼¢ gal., tank car lots, f.o.b. Gulf ports.

Boston: Demand steady; supply plentiful; 16½¢ gal., in tank cars.

Kansas City: Demand slow; trend steady; supply adequate; 10¢ gal., tank car, New Orleans.

Denver: Demand fair; trend steady; supply ample; 10¢ gal., New Orleans; $17.10 ton, New Orleans; $20 ton, West Coast.

Seattle: Demand fair; trend easy; supply good; $20.25, f.o.b. Seattle, tank truck lots.

Los Angeles: Demand good; trend steady; supply ample; $20, f.o.b. tank cars; $20.25, f.o.b. tank trucks.

Buffalo: Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

Atlanta: Demand better; trend steady; supply good; citrus $15@16, Florida producing plants.

St. Louis: Demand slow; trend steady; supply ample; 9¾¢ gal., New Orleans.

New York: Demand fair; trend steady; supply good; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

NIACIN

New York: Trend steady; $6 kilo, 10-kilo lots; $6.20 kilo, 5- and 2½-kilo lots; $6.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Minneapolis: Demand good; supply ample; trend steady; feeding rolled oats $85; reground oat feed $21; feeding oatmeal $69; pulverized $47; crimped $62, all sacked prices, $1 less in bulk.

Chicago: Demand steady; trend firm; supply fair; reground oat feed $19; No. 1 fine ground feeding oatmeal $77; feeding rolled oats $77@80.

Louisville: Demand good; trend steady; supply good; rolled oats $87.30; feeding oatmeal $79.80; pulverized $53.30; crimped $70.80, all sacked.

Memphis: Demand poor; trend higher; supply scarce; 3½% protein, reground oat feed $25.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $20.65; pulverized white oats $51.60; rolled $77; all sacked.

Portland: Demand slow; supply ample; trend unchanged; rolled $65, ground $62, cleaned $64, all sacked.

Philadelphia: Pulverized white, demand slow, supply fair, $54; domestic, demand slow, supply very light, $29.50, nominal; Canadian oat feed, demand slow, supply light, $34.50; all sacked.

Ft. Worth: Demand slow; offerings light for immediate; oat millfeed $51.20, last half December; reground $31.70, last half December, sacked, new jutes.

Boston: Demand steady; supply fair; white pulverized $57.50, reground oat feed $27.50, both sacked.

Los Angeles: Demand slow; trend firm; supply limited; local production, pulverized $66, sacked.

Seattle: Demand good; trend steady; supply fair; $55, delivered, truck lots, 38-lb. or better.

POULTRY BY-PRODUCTS

Ft. Worth: Demand good; supply limited; 55% protein $80@82.50, sacked, f.o.b. north Texas plants.

Boston: Demand and supply steady; $81, Maine shipping points.

Los Angeles: Demand good; trend steady; supply adequate; $1.45 a unit of protein.

Atlanta: Demand good; trend steady; December production sold; meal $70@72.50, f.o.b. Georgia and Alabama producing mills.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots, in 3.36 to 16 gm./lb. mixtures, 3¢ in ton lots or more; freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand slow; none offered at present; carlots, rice bran $34@35, nominal, f.o.b. south Texas rice mills; hulls $3.50, f.o.b. mills.

San Francisco: Demand good; supply ample; bran $45, polished $49, both sacked.

Los Angeles: Demand fair; trend firmer; supply very limited; California production, high fat content, bran $55, sacked, nominal.

Atlanta: Demand good; trend steady; supply nil; bran $46, sacked, delivered.

SCREENINGS

Minneapolis: Good demand sprang up Dec. 2, but supplies still limited; market very strong; Canadian up $2 to $24; bottom of range on lights up $3, range this week $12@20; mediums $21@29; heavies $30@40; flax screenings, basis 15%, up $5 to $48.

Ft. Worth: Demand good; supply limited; ground mixed grain $28.50@30.

Cincinnati: Demand fair; trend steady; supply adequate; 12 to 15 lb. bags grain cleanings $23@23.50, sacked, delivered.

Chicago: Demand mixed; trend higher on grain screenings, easier on Canadian; supply fair; ground grain screenings $32; Canadian $22.40.

Buffalo: Demand and supply fair; trend steady; ground, sacked $40, New York; unground, bulk $30.50, New York.

SORGHUMS

Ft. Worth: Demand fair; supply sufficient; carlots, No. 2 yellow milo $1.94@1.96, delivered Texas common points.

Ogden: Supply normal; milo $43@43.

Seattle: Demand and supply good; trend easy; $45, carloads.

Los Angeles: Demand steady; trend weaker; supply ample; milo $2.12½ cwt.

SOYBEAN OIL MEAL

Minneapolis: Supply adequate; demand fair; possibility that mixers are working off of inventories; down $2 from last week to $49@49.50.

Portland: Demand slow; trend lower; supply ample; $51, sacked, f.o.b. Decatur.

San Francisco: Demand good; supply ample; $78.40.

Ogden: Supply normal; $78@83.

Cincinnati: Demand fair; trend steady; supply adequate; $58.50, Decatur.

Philadelphia: Demand and supply fair; trend unsettled; 44% $55, Decatur.

Omaha: Demand slow; trend slow; supply pressing; 44% $59.60, delivered Omaha.

Wichita: Demand good for bags, fair for bulk; supply ample; 44% $70, 50% $77, sacked; 44% $67, 50% $74, bulk, f.o.b. Wichita.

New Orleans: Demand slow; supply ample; trend steady; $68.50@69.

Ft. Worth: Demand fair; supply adequate; carlots: 44% $66.10@70, immediate through January; 50% protein $72.10, immediate through January; trucks: 44% $68.50; 50% $74.50, prompt.

Memphis: Demand poor; trend lower; supply ample; prime 44% solvent $60, f.o.b. Memphis.

Chicago: Decatur basis, 44% protein, unrestricted billing $58 and eastern restricted $54@54.50; 50% protein, unrestricted billing $62@63 and eastern restricted $57.50@58.

Louisville: Demand fair to good; trend strong; supply normal; $68.70, sacked.

Boston: Demand fair; supply ample; 44% $54; 50% $58, f.o.b. Decatur.

Denver: Demand poor; trend steady; supply ample; $69, Denver.

Seattle: Demand fair; trend easy; supply ample; $78, delivered, carlots.

Kansas City: Demand fair; trend steady; supply adequate; for Kansas City $54.50@55, bulk, Decatur; unrestricted $56.50.

Los Angeles: Demand slow; trend weaker; supply ample; $78.40@78.90.

Atlanta: Demand fair; trend weak; supply good; 44% $65@66, delivered.

TANKAGE

New Orleans: Demand fair; trend easy; supply light; $35.50@36, sacked.

St. Paul: Supply ample; demand better, but still only fair; $68@70, sacked.

Chicago: Demand good; trend steady; supply fair; 100-lb. sacks, 60% protein $80.

Louisville: Demand fair; trend strong; supply good; 60% protein $82.50@87.50, sacked.

Wichita: Demand good; supply sufficient; 60% $80, sacked, f.o.b. plant.

Cincinnati: Demand good; trend steady; supply short; 60% digester $76.

Ft. Worth: Demand fair; supply sufficient; 60% digester $73, Ft. Worth.

Omaha: Demand and trend fair; supply ample; $72.50, sacked.

St. Louis: Demand good; trend weak; supply ample; $69.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.50 lb.; 25-lb. drums $1.55 lb.; f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.50 lb.; 25-lb. drums $1.55 lb.; f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

New Orleans: Demand fair; trend easy; supply ample; $69@71, cottons.

Buffalo: Demand fair; trend steady to higher; supply poor; commercial grade $68, sacked, f.o.b. Buffalo.

COUNCIL

(Continued from page 1)

of the fence" with veterinarians in serving mutual clients. The suggestion was made that services of veterinarians are becoming increasingly important in this day of mass feeding of large numbers of animals in confinement, not only because of greater disease hazards but also because of the need for expert guidance on management procedures.

Registration totaled 217, including 101 veterinarians. This compares with a total attendance at last year's initial conference of 274. Representatives from 20 states were present.

"A great deal of work in this field remains to be done at the 'grass roots level'," Lloyd S. Larson, executive secretary of the Midwest, said. A series of meetings were held in Missouri last summer, and it is probable similar ones will be held in both Kansas and Missouri next year, he reported.

"This program will work anywhere that people are willing to work as they did in Missouri," he said. "We are willing to help with any state or local meeting."

Mr. Larson urged more participation on the part of feed industry people.

While the "working together" theme threaded through much of the conference, most of the discussions (summarized below) provided technical data and practical operating suggestions. In the course of the discussions, too, some "issues" were aired, providing suggestions for the council's future program of professional cooperation.

WHAT THE FEED MANUFACTURER NEEDS FROM THE VETERINARIAN — Maurice Johnson, executive vice president, Professional Feeds Division of Spencer Kellogg & Sons, Inc., Kansas City, and president of the Midwest Feed Manufacturers Assn., declared that the veterinarian often is looked upon as a court—"he must have the respect that we have for a judge." Frequently, Mr. Johnson said, the veterinarian is asked for a decision as to where responsibility lies, and there are very few exceptions.

"Today," he continued, "we are looking to the local veterinarian for something else — for leadership in directing the feeder as he thinks about getting into mass feeding. In some states, veterinarians have organized feeding operations of their own."

Mr. Johnson read a list of questions he said must be answered before a feed lot can be successfully established. Among them were these: In starting a 2,500-head lot, should it be filled first in June or November? How many square feet should it contain? How many cattle per pen? Should I feed roughage? Should feed be pelleted? What kind of a feeder is best? Should there be a windbreak? How high? Should the entire lot be concrete? Or just in front of the feeders? Should I tranquilize? What records should I have? How much mortality should I expect?

"I ask these questions," Mr. Johnson said, "because you are the only advisors I can go to. Prepare your answers in a business-like way, and you will earn the respect of feeders and feed manufacturers."

Veterinarians also can help feeders greatly by developing a record system on treatment of cattle and by helping feeders to recognize problems so that they don't hit the panic button too late. Also, he said, veterinarians can help feeders decide what kind of cattle to buy.

Mr. Johnson declared that the feed industry more frequently is looking to professional people for important responsibilities, and he said that the industry offers many executive opportunities for veterinarians. He compared this development in the feed industry with a comparable situation in the automotive industry several years ago when technical people were first called to top management positions.

Mr. Johnson predicted that the feed industry and the veterinary profession in the future would be working "more closely and as one."

Livestock Trends

In a separate address, given at the banquet the preceding evening, Mr. Johnson also emphasized the growing importance of veterinary service as he described trends in livestock production.

He compared the newness of the feed industry relative to the veter-

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inary profession, which has had established schools in the U.S. for 100 years. The feed industry, established in 1895 and having little stature for the next 20 years, got its first school five years ago.

"Fifteen years ago some in the industry thought we didn't need veterinarians," he said. "Now we feed so many animals in a single operation that a mistake can wipe out a company and the income of many families."

Mr. Johnson noted that feeding operations are growing in two directions. On the one hand are contract operations which may be started by anyone and often mean building of feed mills by the operators. On the other hand are growing numbers of part-time farmers. "I wonder if both approaches won't make inroads into traditional farming operations," he said.

He cited concentration of feeding operations for beef cattle, with an estimated 11,639,000 beef animals in feedlots this year and some operators building packing plants. Also, dairy operations are becoming larger, and some operators are specializing in dairy calf production. In poultry operations, with some having 5,000 to 10,000 hens under roof, there is a "lethal problem" in regard to disease, he said.

WHAT THE FEEDER NEEDS FROM THE VETERINARIAN AND FEED MANUFACTURER—More and more emphasis on farms is on preventive measures to keep livestock or poultry from getting sick in the first place, Forest L. Goetsch, manager, publications division, Doane Agricultural Service, St. Louis, said. "A veterinarian needs to be able to advise a farm feeder how to treat his entire herd to keep the stock healthy. The profession may not like it, but mass medication is here to stay. Feeders are operating on narrow profit margins per head. They want to do everything possible to handle their stock as a group."

Many stockmen are good enough specialists so that they can do some of their own veterinary work, the speaker said. However, in most cases there is plenty left for the professional.

"We know that medicated feeds are not the complete answer to keeping livestock healthy. We know that antibiotics will not replace sanitation. We know that often the farmer's own remedies are not going to work. If he does his own vaccinating he may not always know what he is doing. In the recent outbreak of hog cholera in Illinois and Iowa, it became apparent that not only were large numbers of hogs not vaccinated at all, but some of those that were vaccinated were too young or did not receive the proper amount of vaccine for their weights."

Mr. Goetsch noted that while a feeder may not ask the veterinarians' advice on sanitation, it is part of his duty to point out situations that are apt to lead to trouble.

"Vertical integration," Mr. Goetsch said, "does not loom as some big spectre that is going to wipe out the veterinary profession. However, it is going to bring some changes. The man who is willing to go along with the concept of preventive medicine and mass treatment is likely to have less adjustments to the new contract arrangements than the man who depends mainly on calls to treat individual animals as his main source of livelihood."

The speaker said that in instances where the integrator owns hogs, he is going to make sure their health is protected. Probably veterinarians will be asked to care for livestock and poultry on a retainer basis, he said. Concerning cow pools, Mr. Goetsch said he suspects that veterinarians will either be part of the staffs or serve them on a retainer.

The feeder expects the feed man to keep up on the latest developments in additives and supply them as soon as they are proven beneficial and practical. "You have a responsibility to do some testing yourself and decide whether or not a product should be added," he said. "The feeder will respect you if you have test results which indicate that it may not be the miracle that it is proclaimed to be."

EXPERIENCES OF A VETERINARIAN WITH COMMERCIAL FEEDING OPERATIONS — "Times are changing," Dr. Donald R. Mackey, practicing veterinarian, Greeley, Colo., said. "I'm not completely sold on it, but I can't change it and neither can you."

Dr. Mackey, whose practice is divided about half beef cattle and half dairy, pointed out that no one medicine will take care of all disease, and "just because a treated animal gets up in 15 minutes it's no guarantee he'll live." He advised that feed for beef cattle shouldn't be changed every time the feeder hears of something new, and he advised running of test lots to compare values of new products, both feed and medicinal.

A veterinarian should supply good diagnosis, good supportive medicine and follow through with good nursing. Some, he said, are relying on administering a few drugs and leaving medicine with the feeder.

Veterinarians should charge $15 an hour for their services, Dr. Mackey said. He commented that he didn't care for a retainer arrangement. "A veterinarian should either be a resident or be paid on a time basis." The retainer system is too close to socialized medicine, he said, "and besides, when I'm standing ankle deep in manure on a cold night delivering a calf, I want to know I'm going to get more than $1 for it."

Dr. Mackey related another one of the problems of feedlot veterinarians. "When someone starts in the business, he uses the veterinarian a lot. But when he gets up to 1,000 head, he's likely to ask you to sell him medicines at wholesale so he can treat the animals himself. When he builds a chute, he figures he can handle the treatment. Before then, it is all right for the veterinarian to wade through manure and mud, catch the animals and tie them to a fence for treatment."

Dr. Mackey, who has treated up to 350 head of cattle in 2½ hours, said that a feedlot "must" is a system of hospital cards to record treatment and also a marking system for the animals to indicate type and time of treatment so that progress can be checked quickly.

SHIFT TO MULTIPLE FARROWING AND CONFINEMENT PRODUCTION—"While multiple farrowing and confinement production of swine appear destined to increase markedly in the foreseeable future, the bulk of the evidence on the housing, environmental control, equipment and swine management necessary to most efficiently and economically utilize them is yet to be gained."

This was the conclusion reached by Dr. Francis C. Wingert, Cargill-Nutrena Research Farm, Elk River, Minn. The director of swine research pointed out some of the results of experiments.

"The problems of housing and equipment for swine in confinement are numerous and the approaches at solution tremendously varied," Dr. Wingert noted, "however, the research evidence is extremely meager."

Dr. Wingert pointed out two studies that showed an increase in floor space per pig helped increase gain and improve feed efficiency. The pilot trial was with 68 head of crossbred swine in 9 sq. ft. and 13 sq. ft. per pig areas. The second was with commercial-sized groups in 9.8, 14.7 and 19.6 sq. ft. per pig areas.

The results suggested that total floor space per pig in certain stocks at certain seasons of the year may have a very marked effect on performance and upon the injuries incurred in swine.

Dr. Wingert pointed out the necessity of good pen arrangement and draft-free sleeping floor conditions.

Dr. Wingert cited work at the Illinois Station on feeder space requirements of swine in which pigs at six to a feeder hole gained better on a daily basis and also on a per pound of feed basis than those one and one half and three to a hole. He stressed the need for more research in this and the water space requirement fields.

Manure- and feed-handling was covered by Dr. Wingert. He said that "manure handling is intimately related with type of structure, climate, capital investment, labor and floor space."

Dr. Wingert pointed up work on environmental control. He said some of the research suggests "that cold is not a critical element in influencing pig performance beyond 30 days of age." However, he noted favorable results in sprinkling and fogging tests, saying, "The beneficial effects of fogging or sprinkling for growing-fattening swine at temperatures in excess of 80° F. are generally in direct relation to the severity of the heat."

He noted, concerning subclinical disease and internal parasites, that the buildup of organisms detrimental to swine can be prevented only by thorough cleaning and disinfection of the area involved. He said that with reasonable management of swine under the conditions of concrete confinement, internal parasite control need be a consideration only in breeding stock.

Dr. Wingert pointed out work at an Ohio station saying, "The evidence from our system's research and from the deep litter work at Ohio indicates the possibility of a fuller utilization of antibody protection in economical swine production."

Dr. Wingert also stressed the necessity for an increased emphasis on basic and applied research in the areas of disease inter-relationships, control and prevention.

POULTRY HEALTH AS INFLUENCED BY MANAGEMENT UNDER INTENSIFIED PRODUCTION—Intensive management procedures in which birds may be reared from hatching throughout an entire laying year completely in confinement have greatly increased problems, Prof. J. R. Couch, from the department of poultry science at Texas A&M College, College Station, Texas, pointed out.

Dr. Couch noted some of these problems as "problems of sanitation and disease control, social problems within the flock and general management problems associated with good poultry health."

Dr. Couch stressed the importance of a good flock manager.

"The problems associated with diagnosing or preventing ills in a poultry flock may be greatly reduced if the veterinarian is dealing with a man who has a background in poultry management," he pointed out.

Dr. Couch listed some of the criteria to judge management and health as: Whether or not adequate records are kept, whether the birds are excessively flighty, whether the man has a sound vaccination program, the condition of litter and ventilation in the poultry house and rattling or whistling breath of the birds.

A serious and common management problem with birds of all ages, said Dr. Couch, is overcrowding. He pointed out that sufficient floor space must be provided for all birds. Also in housing recommendations, Dr. Couch urged uniform illumination, stressed the importance of removing litter between groups and discouraged mixing of birds of different ages.

"In extremely hot or extremely cold temperatures," stated Dr. Couch, "birds stop eating or go out of production. For this reason, it is desirable, wherever possible, to design the house in such a way as to prevent temperature extremes." He pointed out some of the dangerous effects that severe weather can have on birds.

Dr. Couch said that birds should be examined for evidence of depraved appetite which generally would indicate abnormal dietary condition. He pointed up the economic problem of feed wastage but warned to watch for listlessness or excessive mortality in a restricted feeding program.

Nutritional deficiencies and disease conditions also were stressed as things to watch. "The appearance of the birds and of the droppings should give considerable evidence of the general health," he said. He pointed out that dehydrated birds may result in case of digestive disorders or of certain types of respiratory diseases and also said that if laying birds show evidence of an enlarged fatty liver, a special nutrition problem may be involved.

"Good management is an intangible factor, but will have a profound effect on the economic success of a poultry operation," he said. "In many cases, the greatest service a veterinarian can render to the poultryman is to suggest improvements in management practices."

BEEF CATTLE MANAGEMENT PRACTICES CAN INFLUENCE ANIMAL HEALTH AND PERFORMANCE—The successful cattle feeding operation is founded upon anticipating and being able to cope with each and every eventuality, Dr. Conwell W. Johnson, Larro Research Farm, General Mills, Inc., Indianola, Iowa, told the group.

Dr. Johnson pointed out the conditions that need to be considered as the elements of weather, drinking water, roughage, feeding program and texture of feed.

He noted experiments that showed shade paid big dividends in places where temperatures frequently are in the upper 80 and 90° brackets and also that calves fed an extra good growing winter ration do not make top gains on pasture.

Dr. Johnson suggested a laboratory analysis of the water when a frequent scouring condition persisted. He noted that a roughage management program can readily overcome a vitamin A problem.

Dr. Johnson divided methods of feeding cattle into following programs: High roughage, medium roughage, low roughage, high carbohydrate and pelleted complete feeds.

"The pelleting of all roughage rations may be one way of obtaining more efficient roughage utilization," said Dr. Johnson. "This, however, may not always be economically or practically feasible. Recent work at Larro Research Farm has suggested that about an 8% improvement was obtained in both daily gain and feed conversion by pelleting part of the hay in a roughage feeding program."

Complete feeds for cattle offer a very promising way of feeding large groups of cattle, Dr. Johnson stated. "This feeding program has its advantages and its disadvantages. Furthermore, this system of feeding provides an excellent method of utilizing milling byproducts. Recent work at Larro Research Farm would indicate that some of these byproducts are about equal to corn when fed as an ingredient in a pelleted complete feed.

"The future looks bright for a pelleted complete feed for large cattle feeding yards," said Dr. Johnson. "There still are many problems to be solved, but when we learn how to unlock the energy potential of the cellulose and lignin contained in such products as corn cobs, corn stalks, hay, bagasse, cotton seed hulls, etc., then pelleted complete feeds will come into their own, providing a management program can be developed to cope with the problems created by feeding complete feeds."

MANAGEMENT UNDER INTENSIFIED DAIRY PRODUCTION — Changes pointing toward intensification of dairy production involve application of newer knowledge, particularly in breeding, nutrition management and economics, Dr. N. L. Jacobson of the department of dairy husbandry, Iowa State University, Ames, Iowa, said.

Dr. Jacobson said that intensified dairy production from the standpoint of nutrition and management involves

Purposes Listed for Newly-Formed Veterinary-Nutrition Council

KANSAS CITY—A list of 10 purposes of the newly-formed Midwest Veterinary-Nutrition Council was presented at the conference here this week. It is expected that the organization's program will revolve around these general aims.

The list states that the purposes of the council shall be to:

1. Provide for a continuation of the Midwest Veterinary Nutrition Conference.
2. Promote a continuation of "grass roots" meetings to encourage greater cooperation and understanding between the veterinarian and the local feed dealer, including the feed salesman.
3. Encourage the working together of veterinarians, feed industry, land grant colleges and universities and all institutes of research and development in developing joint uniform management recommendations so that all segments of service to the farmer "tell the same story."
4. Encourage more basic research on the effects of stress conditions on nutrition requirements and production performance.
5. Encourage more exchange of information and joint research projects between veterinary medicine and animal husbandry departments in colleges or universities.
6. Encourage more industry-college seminars with animal husbandry and veterinary medicine departments for industry speakers to advise and counsel.
7. Encourage change of curricula to keep abreast of rapidly changing conditions.
8. Encourage a more ethical approach to sale of agricultural products. There is concern over some current indiscriminate advertising.
9. Encourage veterinarians to confer with feed manufacturers as to formulations and feeding problems. Likewise, feed manufacturers should consult veterinarians on disease problems.
10. Prepare an annual progress report of activities to be included in transcript of Veterinary Nutrition Conference as well as suggestions for work to be carried on the following year.

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such goals as early weaning of calves and/or the use of milk replacers and starters to maximize the amount of whole milk available for sale, early calving of the dairy heifer, long productive life of the cow, high and efficient milk production by the individual cow, the use of larger dairy units and systems of minimizing labor requirements without altering appreciably the effectiveness of the program.

"The current trend is toward fewer cows, much higher milk production per cow and greater total production," Dr. Jacobson pointed out. "Furthermore, the number of farms producing milk for sale is declining and the average size of dairy herds is increasing."

On calf raising, Dr. Jacobson commented, if the calf is allowed to remain with its dam for several weeks following birth, problems of feeding and management tend to be minimized. He noted also that colostrum, the milk produced immediately after calving, always should be made available to the calf—either by nursing or by hand feeding.

"For greatest economy and for rapid development of rumen function, dry feeds must be consumed in appreciable quantities by the calf at an early age," he said. Careful formulation of the milk replacer is necessary if its performance is to be satisfactory, he added.

On nutrition, Dr. Jacobson said that animals which are underfed (insofar as energy is concerned) for a time will tend to catch up if shifted to a more favorable diet. "Although gross underfeeding certainly is not to be recommended," he said, "periods of moderately low energy intake during growth probably are not critical insofar as future producing ability of the animal is concerned." Dr. Jacobson also noted that intensified feeding, insofar as energy is concerned, may have adverse effects on subsequent milk production.

Dr. Jacobson made these suggestions:

(1) Permit the calf to have colostrum, then feed it a limited amount of milk or milk replacer for 6-8 weeks plus a good concentrate mixture (starter) and a liberal amount of high quality hay.

(2) From 4-10 months of age, feed the heifer 2-4 lb. of concentrate plus plenty of high quality forage.

(3) From 10 months to calving, feed the heifer all the high quality forage she will eat. Feed grain only if forage is of lower quality or if the heifer is thin. Obviously salt should be available at all ages and in some cases trace mineral salt would be desirable. Similarly, a source of phosphorus and calcium, the amount depending upon the nature of the forage, should be offered.

These procedures "should minimize feed costs from birth to first parturition and should permit normal sexual development, reasonably early first parturition, good udder development, satisfactory expression of milk-producing ability and the possibility of a reasonably long productive life," Dr. Jacobson said.

Dr. Jacobson noted that when the dairy heifer begins lactating, "There is no justification for scanty feeding."

Dr. Jacobson pointed out that perhaps the primary factor in determining success or failure of the intensification that is approaching is whether adequate attention is given to herd health. He noted the necessity of preparation for problems and adjustments saying, "Changes in dairy production in recent years have been great, but those in the near future promise to be even greater."

PRODUCTIVE HEALTH AND STRESS—The state of productive health of livestock is a result of adequate nutrition, absence of disease and avoidance of excessive or numerous stresses exerted simultaneously, it was pointed out by Dr. R. C. Klussendorf, director of veterinary medical services, Commercial Solvents Corp., Terre Haute, Ind.

Dr. Klussendorf explained the various types of stress and went on to note that stress increases nutritional requirements but also reduces feed consumption. The result is a rapid depletion of reserves and invasion of disease-producing bacteria.

Dr. Klussendorf also commented on problems in relations among veterinarians, animal owners and feed men, citing examples of misunderstanding. He particularly emphasized the need for better communications and direct contact between veterinarians and feed men in dealing with problems where inadequate nutrition and disease overlap and may result in misunderstanding.

"The important fact to remember is that veterinarians and feed men are highly dependent upon each other, as well as upon the livestock feeder," said Dr. Klussendorf. "This interdependence will surely increase as vertical integration or contract farming develops larger livestock units and greater specialization."

Dr. Klussendorf pointed out that disease prevention is more profitable than treatment of sick animals. "Let's all direct greater attention to this fact, which we all recognize," he said. He suggested that feed men work with veterinarians in setting up programs of disease prevention.

RELATIONSHIP OF NUTRITION TO MASTITIS—Dr. William E. Petersen, University of Minnesota, told of the many substances that have been infused into cow's udders to study the antibody production against them.

On the basis of studies at the University of Minnesota, he said, one could theoretically expect that the udder could be sensitized to a feedstuff and that mastitic flare-ups would occur when such feeds are ingested. Investigation of a number of claims that cows "flared-up" with mastitis when either corn or soybean meal was fed failed to show such a relationship, he said.

ARTHRITIS IN SWINE—In discussing the cause and diagnosis of arthritis, Dr. William S. Monlux, veterinarian, Iowa State University, said that erysipelas is an occasional cause of arthritis in swine but it is not the major cause of the enlarged joints observed on many farms in swine areas.

He went on to say that approximately 80% of the swine in the U.S. have lesions in the nose and lungs and the majority of these animals will have arthritis.

Bagy pigs acquire the disease shortly after birth from an infected sow. Infection of the baby pigs can be prevented if they are removed from the mother at the time of birth. He said most veterinarians have found that antibiotics are of little value in treating arthritis in young pigs, which is additional evidence that the infection is probably not erysipelas.

Dr. Monlux said great care should be exercised when recommending the addition of mineral supplements to the feed unless careful consideration is given to the ingredients already contained within the ration. He said, "If a disease is present in a herd of swine, then nothing is known about the nutritional requirements of the animals. The suggested rations for swine production are based upon the requirements of average swine under average conditions, and the man conducting feeding experiments tries to utilize swine that are as near normal as possible. None of the available figures ever indicate the nutritional requirements of sick animals.

"The requirements of any given vitamin, mineral, protein, carbohydrate or fat may increase 3, 4, 10, 20 or more times when an animal is ill. Because of this, bone disease is frequently observed in herds of swine affected with pneumonia, enteritis, dermatitis, parasitism and other diseases that are being fed a ration which is adequate for average swine under average conditions."

EDEMA DISEASE OF SWINE—The probable cause of edema disease of swine is a toxemia resulting from the toxins of certain serotypes of coliform organisms, according to Dr. Earl M. Baldwin, Jr., Baldwin Laboratories, Inc., Omaha, Neb.

Dr. Baldwin said non-hemolytic coliform organisms should also be given due consideration as a causative agent although no mention of them has occurred in literature.

He said diagnosis of edema is often confused with hog cholera because of the weak, incoordinate gait and central nervous symptoms. The sudden onset, rapid course and relatively low temperature help to distinguish edema disease from hog cholera, Dr. Baldwin said. Also, the lymph nodes, particularly the mesenterics, are swollen and edematous and the mesenteric blood vessels appear engorged.

Treatment involves the necessity of changing the conditions of the digestive tract by medicating the feed with drugs that are effective in controlling the coliform organisms. He said the use of medicated feeds is not always effective in stopping future losses but is perhaps the most desirable treatment.

EXPERIENCES WITH FEEDLOT DISEASES OF CATTLE—Dr. Donald R. Mackey, practicing veterinarian from Greeley, Colo., pointed out that there are many different feedlot diseases and that diagnosis is important before treatment is started.

"Your veterinarian is the one who should make the diagnosis and do the treating in the majority of these cases," he said. "I will grant that with many of the new drugs now available, you will be able to save many animals under home treatment, but a veterinarian has to save only one or two more animals per month to more than pay for his services. You have to use the drugs anyway, so why not have the right ones used, instead of wasting time, drugs and money in hoping that you are using the right one."

Dr. Mackey discussed in some detail some of the diseases encountered in the indoctrination of cattle into the feedlot and a few of those encountered in the fattening period. He noted that indoctrination of calves into the feedlot seems to be the one thing that gives the most trouble. He went on to outline a routine which might be used in handling and use of drugs.

At the same time, he said that, because of differences among animals, no one set regime in feeding and treating the animals can be carried out on every lot.

TRAINING VETERINARIANS FOR TOMORROW'S AGRICULTURE—"Clinical diagnosis must remain a most important part of the veterinarian's training," Dr. A. H. Groth, dean of the School of Veterinary Medicine, University of Missouri, said. "Ability to perform certain laboratory tests and recognition of the need to utilize facilities of a complete central diagnostic laboratory will be increasingly important. Veterinarians of the future must also have a much better understanding of nutrition of healthy and sick animals.

"In dealing with sick animals consideration must be given to the effect of disease on vital tissues and organs. More knowledge of therapeutic nutrition or prescription rations will be needed."

Other areas in which a veterinarian will need more training, he continued, should include livestock management, location and construction of buildings and equipment for housing and handling livestock and poultry, the economics of livestock and poultry production and marketing and an understanding of contracts as they apply to the veterinarian's services.

Fewer students, Dean Groth said, have farm backgrounds, or if they have, they may not have had livestock on the farms. This makes it necessary to teach them basic animal husbandry. The profession, he said, is attracting the interest of more girls, but it is not attracting all of the male students that the profession would like to have.

A VETERINARIAN LOOKS AT CONTRACT FARMING—Some veterinarians have consolidated their practices to meet the problems of present-day farming by forming clinics and group practices, said Dr. Frank W. Jordan, practicing veterinarian, Abilene, Kansas. This enables veterinarians to provide a better service and have an opportunity to perform other community service as well, he said.

Dr. Jordan said he would not like to see farmers changed to the status of industrial laborers since the family farm represents a way of life in America.

The mutual goal of feed men and veterinarians, he said, "is producing food that is safe and wholesome for human consumption. It is our mutual professional duty to discourage misleading advertising and not to endorse everything that comes on the market."

MARKETS

(Continued from page 2)

Demand for corn continues good, with supplies not as plentiful as in the past, resulting in prices advancing as much as 3¢ bu. to $1.28 bu. delivered middle Georgia.

Many of the concentrate plants who hoped to commence operations in Florida this week have postponed their operations until next week, resulting in a tightness of citrus pulp with some of the processors, and it will be at least another two weeks before the backlog of orders can be shipped. Prices remain firm at $32.50, f.o.b. producing plants.

Northeast

There was no snap or direction to formula feeds and sales continued slow. Consumers may be holding back because some ingredients have started to slip and they want to see how far the trend will go.

It was also thought that some of the dullness could be attributed to the fact that many consumers still have a supply of farm and commercial feeds on hand.

End products continued on an even keel. Eggs were steady, as were broiler prices in the East, although there was some easiness in the South and Southwest.

Dairy feeds easily led in sales tonnage, followed by egg mashes, growing mashes and pullet development feeds. Turkey feed demand has dwindled to almost nothing, although a few birds are being fed for the Christmas trade. Broiler feed tonnage was low.

South Central

Feed manufacturers are doing only a moderate amount of business and, for the most part, are barely operating on a five-day schedule. Still, they consider that they are doing about as well as can be expected under the circumstances.

Most of the lack of interest in formula feeds and the reluctance on the part of the feeders to buy is traceable to the poor feeding ratios that exist, mill men assert. They cite the recently issued month end report of prices received by farmers showing that feeders are continuing to lose purchasing power chiefly because of lower prices received for meat animals. Feeders are receiving less for livestock, poultry and eggs than they did a year ago, but most feed grains are higher and formula feeds are only slightly below those of last year. In view of these factors, mill men are not unduly pessimistic over being unable to match the record sales of a year ago.

Hog feed sales are down some, but not drastically so. From present indications, cattle feed deliveries may eventually top those of last year. Dairy feeds, following the usual seasonal pattern are slowly expanding. The worst part of the slide in poultry feed sales seems to be over, and although no improvement in demand is looked for at present, no further decline is anticipated.

Ohio Valley

With temperatures this week remaining steadily below the freezing mark, requiring considerably more indoor feeding of chickens and other farm animals, most Ohio Valley manufacturers reported a slow but steady increase in orders. While the business pickup was not sufficient to create any widespread rejoicing, it did serve to solidify the opinions expressed so frequently during recent weeks that improvement in sales would develop with the advent of a prolonged spell of below-freezing temperatures.

A further contribution to this much-to-be-desired end result has been the stiffening of prices for a wide variety of feed ingredients. With the outlook said to be good for further ingredient price upswings, area manufacturers are expressing confidence that a good winter season is ahead for their products.

This optimism is supported by the sales trend for eggs and all types of meats during the last week, when area stockyards and wholesale egg and poultry markets reported very satisfactory sales, with prices generally slightly higher.

One feed manufacturer noted this week, "There is a growing belief that problems in the steel and railroad industries will be settled without further work stoppages." Should things turn out this way, it will be entirely logical to expect the biggest egg and meat consumption during the coming months that this country ever has experienced.

Mountain States

Sales volume in formula feeds in this area has been down somewhat from the previous week. It is also down considerably from the same time a year ago. Drylot cattle feeds are still the most in demand, and range cattle and sheep feeds are very strong in demand. There is absolutely no turkey feed business now.

All formula feed dealers are very busy getting out previous orders that were placed by ranchers, consequently there is nothing being ordered or sold for inventory build up. Previous commitments are coming in so fast to dealers that some have experienced difficulty in getting cars fast enough.

Pacific Northwest

Oregon and Washington formula feed sales were well maintained during the week in front of a dependable demand for dairy, livestock, egg and broiler rations.

Reports at Portland and Seattle indicated that feeders and mixers carried fair inventories of principal feedstuffs and current ingredient purchases were about moderate in volume.

Mixed prices continued to rule feedstuffs market trading with the general demand appearing on the spotty side.

Quotations for wheat millfeeds dropped fully $2 ton as the reflection of larger offerings from an increased flour grind and slow demand.

Cottonseed meal values worked $1 ton higher as did dehydrated alfalfa meal. Whole corn and barley prices declined around 50¢ ton, with oats values unchanged to as much as $2 ton higher than the previous trading period.

Pacific Northwest alfalfa hay markets were quiet during the week with prices holding fully steady. The slow trading reflected, in part, very moderate temperatures and favorable weather for grazing in many coastal feeding sections.

Hay demand from dairymen and other livestock feeders was narrow but a continued firm holding tendency by growers was an offsetting influence.

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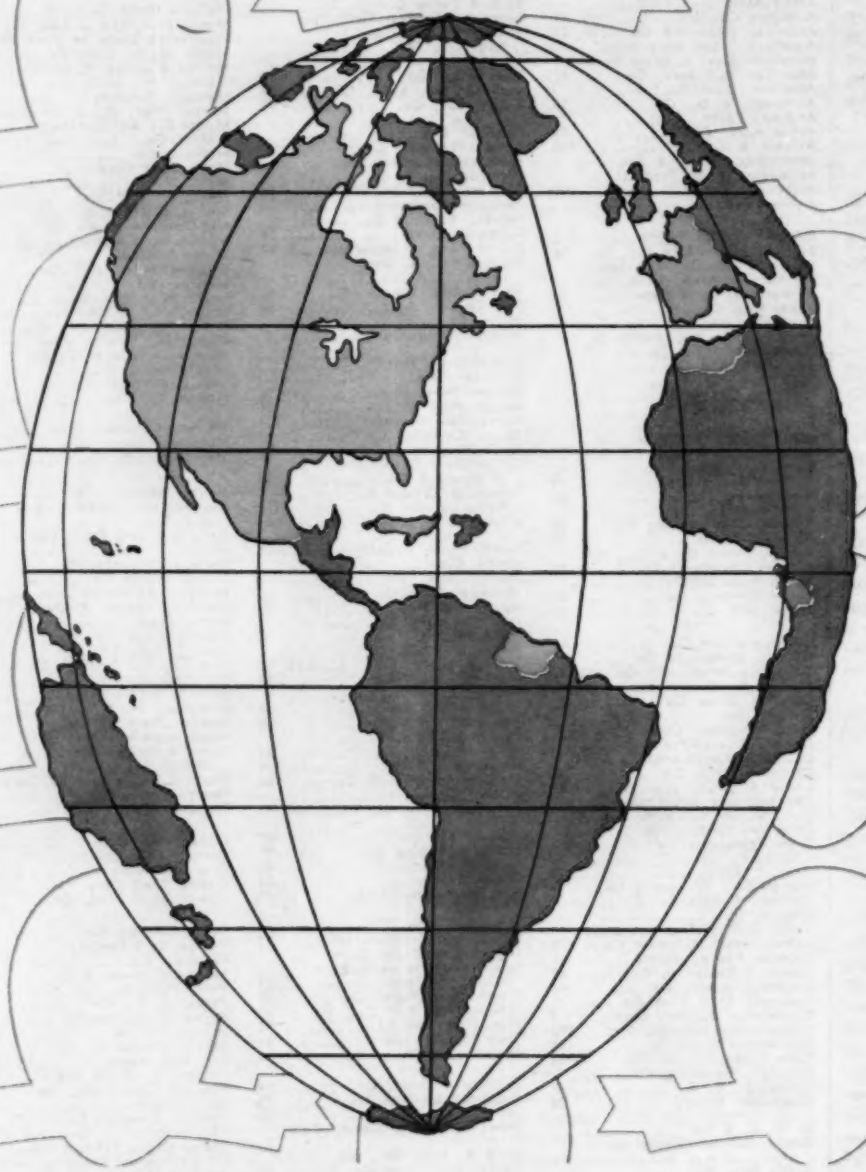

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